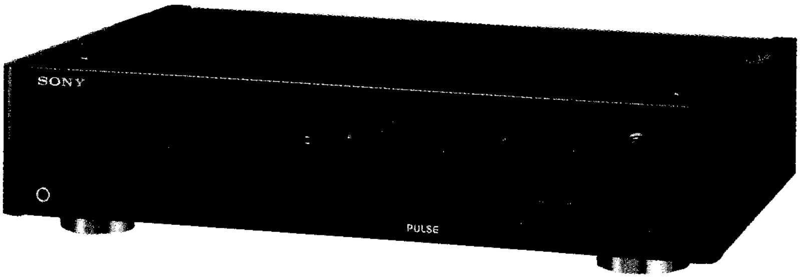
DTC-59ES

SERVICE MANUAL

US Model
Canadian Model
AEP Model
E Model



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SPECIFICATIONS

Tape	Digital audio tape
Recording head	Rotary head
Recording time	Standard: 120 minutes. Long-play mode: 240 minutes (with DT-120)
Tape speed	Standard: 8.15 mm/s, Long play mode: 4.075 mm/s
Drum rotation	Standard: 2,000 rpm, Long-play mode: 1,000 rpm
Error correction	Double Read Solomon code
Tape	
Track pitch	13.6 µm (20.4 µm)
Sampling frequency	48 kHz, 44.1 kHz, 32 kHz
Modulation system	8-10 Modulation
Transfer rate	2.46 Mbit/sec.
Number of channel	2 channels, stereo
D/A conversion (Quantization)	Standard: 16-bit linear Long-play mode: 12-bit non-linear
Frequency response	Standard: 2-22,000 Hz (±0.5 dB) Long-play mode: 2-14,500 Hz (±0.5 dB)
Signal to noise ratio	Standard: more than 92 dB Long-play mode: more than 92 dB
Dynamic range	Standard: more than 92 dB Long-play mode: more than 92 dB
Total harmonic distortion	Standard: less than 0.0045% (1 kHz) Long-play mode: less than 0.08% (1 kHz)
Wow and flutter	Below measurable limit (±0.001% W. PEAK)

Model Name Using Similar Mechanism	NEW
Tape Transport Mechanism Type	DATM-102

Input

	Jack type	**Impedance**	**Rated input level**
LINE IN	phono jack	47 kohms	-4 dBs
DIGITAL IN	phono jack	75 ohms	0.5 Vp-p, ±20%
DIGITAL IN	optical jack	—	—

Output

	Jack type	**Impedance**	**Rated output**	**Load impedance**
LINE OUT	phono jack	470 ohms	-4 dBs	More than 10 kohms
PHONES	stereo phone jack	220 ohms	0.6 mW	32 ohms
DIGITAL OUT	phono jack	75 ohms	0.5 Vp-p ±20%	—

DIGITAL OUT (optical jack): wavelength 660 nm

– continued on next page –

DIGITAL AUDIO TAPE DECK

SONY®

MICROFILM

General

Power requirements	120V AC, 60Hz : US, Canadian model 220-230V AC, 50/60Hz : AEP model 110-120, 220-240V AC, 50/60Hz : E model
Power consumption	32 W
Dimensions	Approx. 470 x 110 x 350 mm (w/h/d) (18 $^5/_8$ x 4 $^3/_8$ x 13 $^7/_8$ inches)
Weight	Approx. 6.6 kg (14 lb 10 oz)

Remote commander (supplied)

Remote control system	Infrared control
Power requirements	3V DC, with two size AA (R6) batteries
Dimensions	Approx. 63 x 19 x 175 mm (w/h/d) (2 $^1/_2$ x $^3/_4$ x 7 inches)
Weight	Approx. 130 g (4 oz) incl. batteries.

Supplied accessories

Sony batteries SUM-3(NS) (2)
Audio connecting cords (2 phono plugs - 2 phono plugs, stereo for line inputs and outputs) (2)
Screws (4)

Design and specifications are subject to change without notice.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER SES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

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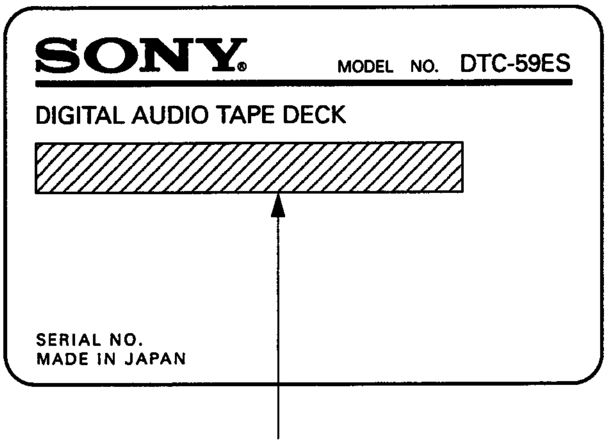
PRECAUTIONS FOR INSPECTIONS AND REPAIR WITH POWER OFF

Before beginning repair work after turning OFF the main switch, be sure to first remove CN932 (EH8P) of the power board. When assembling the equipment, be sure to plug this connector last.
This is because, even with the main switch turned OFF, electric charges still remain in the smoothing capacitor in the power board. Therefore, if another flexible board is inserted or removed, a terminal of the power supply may short an adjacent terminal while destroying the device.

MODEL IDENTIFICATION

- SPECIFICATION LABEL -



US,Canadian model : AC 120V 60Hz 32W
AEP model : AC 220-230V~ 50/60Hz 32W
E model : AC:110-120, 220-240V~ 50/60Hz 32W

CAUTION

Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the equipment manufacturer. Discard used batteries according to manufacturer's instructions.

ADVERSEL !

Lithiumbatteri – Eksplosionsfare ved fejlagtig håndtering.
Udskiftning må kun ske med batteri
af samme fabrikat og type.
Lever det brugte batteri tilbage til leverandcren.

ADVARSEL

Lithiumbatteri – Eksplosjonsfare.
Ved utskifting benyttes kun batteri som
anbefalt av apparatfabrikanten.
Brukt batteri returneres apparatleveranderen.

VARNING

Explosionsfara vid felaktigt batteribyte.
Använd samma batterityp eller en likvärdig typ som rekommenderas av apparattillverkaren.
Kassera använt batteri enligt gällande föreskrifter.

VAROITUS

Paristo voi räjähtää, jos se on virheellisesti asennettu. Vaihda paristo ainoastaan laitevalmistajan suosittelemaan tyyppiin. Hävitä käytetty paristo valmistajan ohjeiden mukaisesti.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety check before releasing the set to the customer: Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5mA (500 microampers). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig.A)

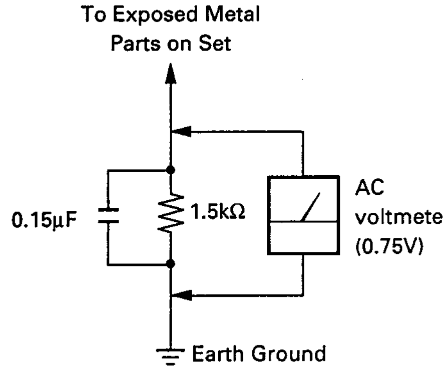


Fig. A. Using an AC voltmeter to check AC leakage.

SECTION 1
GENERAL

This section is extracted from instruction manual.

Features

Serial copy management system
This unit utilizes the serial copy management system that permits digital-to-digital recording for one generation. You can record CD sound or other digital formats through a digital-to-digital connection. (See page 42.)

Date Function automatically memories the recording date and time
The year, month, day, day of the week, hour, minute and second are automatically memorized in the subcode area during recording, so that during playback you can display this data to check when the tape was recorded. This function is especially convenient when recording live performances, etc.

Three sampling frequencies
Recording/playback can be done with three sampling frequencies (48 kHz, 44.1 kHz and 32 kHz).
48 kHz: For analog and digital input signals in a standard mode.
44.1 kHz: For compact disc and pre-recorded DAT tape.
32 kHz: For analog input signals in a long-play mode.

Long play mode
This unit can operate in a long-play mode. Analog input signals can be recorded or playback for up to four consecutive hours when the DT-120 DAT cassette tape is used. The sampling frequency will be 32 kHz in the long-play mode.

Visible cassette loading
You can view the tape operation through the lid of the cassette compartment. Due to a revolutionary new transport mechanism, cassette loading time has been significantly reduced.

Excellent sound quality
1-bit A/D converter
For the A/D converter section which converts analog input signals to digital signals, the unit employs a 1-bit A/D converter which theoretically generates no zero-cross distortion for a clear, elegant sound quality.
Pulse D/A converter
Superior playback performance is achieved with a 1-bit D/A converter.

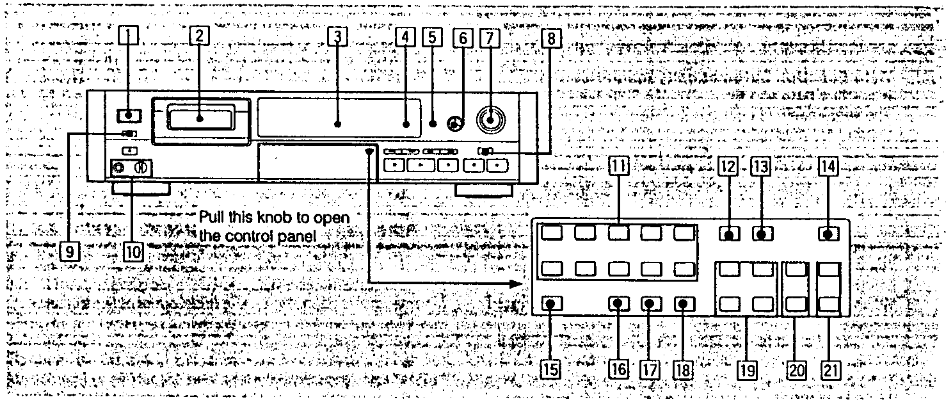
Rich variety of subcode information
This unit can record subcode information such as Start IDs, program numbers, Skip IDs, and absolute time data, enabling you to quickly locate tunes and display the playback time in the same manner as when playing compact discs.

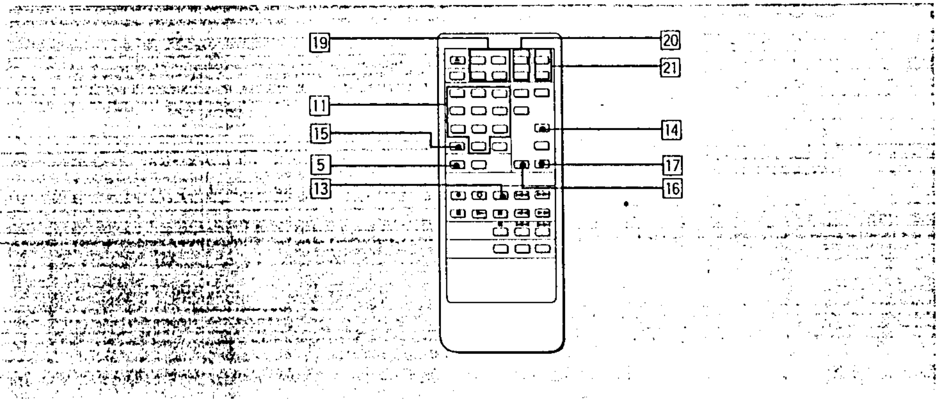
Digital fade-in/fade-out
Professional sounding fade-in/fade-out of either digital or analog signals can be accomplished by use of the FADER button.

Post edit recording of sub codes
You can record or rewrite the following sub codes after the audio signal recording has been completed.
Start ID: Signifies the beginning of a selection.
Program number: Gives a number to the selection.
Skip ID: Signifies the beginning of a portion to be skipped.
End ID: Signifies the end position of recording/playback.
Since sub codes are written on the tape separately from audio signals, the audio signals are not affected.

Location and Function of Controls

Front Panel/Remote Commander





1 **POWER switch**
Turns the power on and off.

2 **Cassette compartment**
Insert a cassette with the window side up and the safety tab facing you.

3 **Display window**

4 **Remote sensor**
Receives the signal from the remote commander.

5 **MODE button**
Selects the display mode among the absolute time, elapsed time of the current selection, remaining time to the end of whole tape and linear counter (tape running time). Each time you press the button, the display changes sequentially.

6 **INPUT SELECT selector**
Set according to the signal to be recorded.
ANALOG: For recording from the equipment connected to the LINE IN jacks.
OPTICAL: For recording from the equipment connected to the DIGITAL IN (OPTICAL) jack.
COAXIAL: For recording from the equipment connected to the DIGITAL IN (COAXIAL) jack.

7 **REC LEVEL (recording level) controls**
Adjust the recording levels and balance for the analog input signals.
The outer knob controls the L (left) channel level and the inner knob the R (right) channel level. The knobs can be adjusted together. To adjust each channel independently, turn the knob while holding the other knob.
When recording digital signals, it is not necessary to adjust the recording levels.

8 **REC MODE selector**
Normally set to the STANDARD position.
When this selector is set to the LONG position, you can record analog input signals or digital signals with 32 kHz in the long-play mode.

9 **TIMER switch**
Normally set to the OFF position. When recording or playing back at the desired time using a commercially available audio timer, set to the REC position or the PLAY position respectively.

10 **PHONES-LEVEL jack and control**
Insert the headphones plug to this jack and turn the control to adjust the headphones volume level.

11 **Numeric buttons (0–9)**
Designate the desired program number to be played back before starting playback. Designate the desired number in the record-pause mode, the program number is written consecutively from the designated number.

12 **MUSIC SCAN button**
Press to listen to the beginning of each selection successively.

13 **FADER button**
Press to fade in or fade out during recording or playback.

14 **MARGIN RESET button**
Press to reset the margin of peak level.

15 **CLEAR button**
Press to cancel the program number which has been mistakenly entered.

16 **RECORDED button**
Press to display the recording day of the tape being played.

17 **PRESENT button** Press to display the current time.
Each time the RECORDED or PRESENT button is pressed, day, month and year display, the day of the week display or hour, minute and second display is switched sequencially.

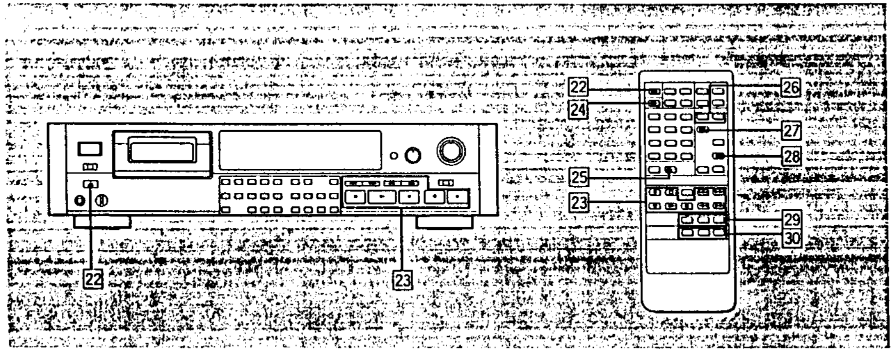
18 **CLOCK SET button**
Press to adjust the time of the clock built in this unit.
In this mode, the 0 button and the 9 button function as the + and – buttons respectively.

19 **START ID buttons**
AUTO: Press to turn on and off the AUTO indicator. When the AUTO indicator is lit, the start ID will automatically be written during recording. When the AUTO indicator is not lit, press the START ID WRITE button at the point where you want to write a start ID.
WRITE: Press to write the start ID at the desired point during recording or playback.
ERASE: Press to erase a start ID. When a start ID and a program number are written on the tape, both codes are simultaneously erased by pressing this button.
RENUMBER: Press to renumber all programs on the tape. When only the start IDs are written, pressing this button will insert the proper program numbers beginning with "1". The tape will rewind and start from the beginning to accomplish this function.

20 **SKIP ID buttons**
WRITE: Press at the beginning of the portion you may wish to skip later. A skip ID will be written from the point where you pressed this button.
ERASE: Press to erase the nearest skip ID which is before the current position.

21 **END ID buttons**
WRITE: Press to write the ID signifying the end of playback or recording.
ERASE: Press to erase the end ID.

Front Panel/Remote Commander



22 **≜OPEN/CLOSE button**
Press to open or close the cassette compartment.

23 **Tape operating buttons**
■ (stop): Press to stop recording or playback.
► (play): Press to play back the tape.
IIPAUSE (pause): Press to stop for a moment during recording or playback. To restart recording or playback, press this button again or press the ► button.
If the unit is left in the pause mode for about 10 minutes, it will automatically be released and the deck will enter the stop mode. To restart recording or playback from the stop mode, press the ●REC or ► button respectively.
OREC MUTE (record muting): Inserts a sound-muted portion (space).
●REC (recording): Press to enter the record-pause mode. After pressing this button, press the **II**pause or ► button.
I◄◄/►►I (AMS): Press to locate the beginning of the selection during the playback.
◄◄/►► (rewind/review, fast-forward/cue): In the stop mode, press to rewind/fast-forward the tape. During playback, press to rewind or fast-forward the tape while listening to the sound.

24 **DISPLAY MODE button**
Changes the display mode. (Refer to page 10.)

25 **RESET**
Resets the linear counter to "0M 00S".

26 **RMS play buttons**
ENTER: To program the selections in a desired order, press this button after pressing the numeric buttons.
CHECK: Press to check the programmed contents.

27 **REPEAT 1/ALL button**
Press to play a desired portion repeatedly. Each time you press the button, the indicatior changes as follows:
REPEAT 1 → REPEAT ALL → off

28 **SKIP PLAY button**
Press to activate the skip ID code function. The portion of the tape previously marked will be skipped.

29 **CD operation buttons**
Operative only for the Sony CD player equipped with a Remote Commander.
II (pause): Press this button twice to start playback. Press this button once in the playback mode, the deck enters the pause mode.
I◄◄/►►I (AMS): Press to locate the desired selection on the Compact Disc during playback or in the stop mode.

30 **CD SYNCHRO (CD synchronized recording) buttons**
(The playback of the Sony CD player equipped with a Remote Commander and the recording of the DAT deck can be performed simultaneously.)
STANDBY: Press to set the unit in the record-standby mode.
START: Press to start recording of the DAT deck and then playback of the CD player.
STOP: Press to stop the DAT deck recording and the CD player playback.

Remote Commander Operation

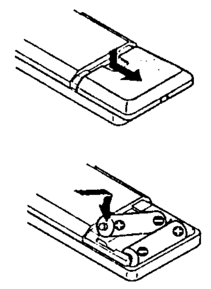
Each button on the remote commander functions in the same way as those having the same name on the front panel.
However, the following operations cannot be performed using the remote commander. Use the front panel controls instead.

- Turing the power on and off
- Selecting digital(optical/coaxial)/analog input source
- Setting the clock
- Adjusting the recording level and balance
- Adjusting the headphones level
- Setting the timer recording/playback
- Selecting the record mode (standard or long)

The following operations can be performed only with the remote commander.

- To activate CD synchronized recording using a Sony CD player and controlling the CD player
- To locate the desired selection on the Compact Disc or to set the CD player in the pause mode (possible only when a Sony CD player is used.)
- Repeat play
- Skip play
- RMS* play
  *RMS: Random Music Sensor
- To reset the linear counter to "0 M 00S"

Installing Batteries



Insert two size AA (R6) batteries with correct polarity, and close the lid.

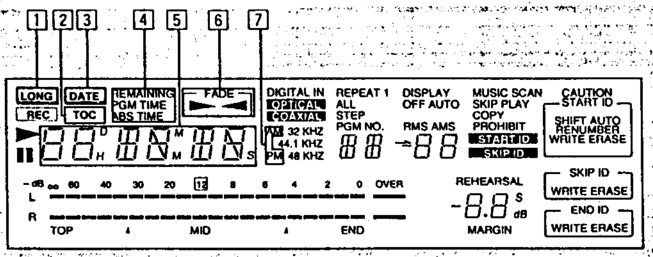
Notes on remote control

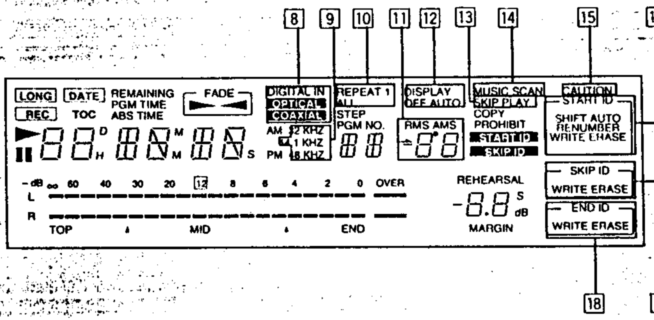
- Do not expose the remote sensor on the deck to strong light such as direct sunlight, lighting apparatus, etc.
- Do not place any obstructions between the Remote Commander and the remote sensor, or else operations will not be performed correctly.
- The controllable range is limited. Point the Remote Commander directly at the remote sensor on the deck.
- When remote control operation distance becomes shorter, the batteries are weak. Replace both batteries with new ones.

To avoid battery leakage
When the commander will not be used for a long period of time, remove the batteries to avoid damage caused by battery leakage and corrosion.

Battery life
About half a year of normal operation can be expected when using the Sony SUM-3 (NS) batteries.

Display Window


1
2
3
4
5
6
7
LONG
REC
DATE
TOC
REMAINING
PGM TIME
ABS TIME
FADE
DIGITAL IN
OPTICAL
COAXIAL
AM
PM
32 KHZ
44.1 KHZ
48 KHZ
REPEAT 1
ALL
STEP
PGM NO.
DISPLAY
OFF AUTO
RMS AMS
MUSIC SCAN
SKIP PLAY
COPY
PROHIBIT
START ID
SKIP ID
CAUTION
START ID
SHIFT AUTO
RENUMBER
WRITE ERASE
SKIP ID
WRITE ERASE
END ID
WRITE ERASE
REHEARSAL
MARGIN
-dB ∞ 60 40 30 20 12 8 6 4 2 0 OVER
L
R
TOP
MID
END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OPTICAL
COAXIAL
REPEAT 1
ALL
STEP
PGM NO.
DISPLAY
OFF AUTO
RMS AMS
MUSIC SCAN
SKIP PLAY
COPY
PROHIBIT
START ID
SKIP ID
CAUTION
START ID
SHIFT AUTO
RENUMBER
WRITE ERASE
SKIP ID
WRITE ERASE
END ID
WRITE ERASE
REHEARSAL
MARGIN
TOP
MID
END

To turn off the display window
When the power is turned on, the display window also is turned on. During recording or playback, all display or some parts of the display can be turned off as follows:
When operating with the front panel controls
While pressing the MODE button, press the 0 button.
When operating with the remote commander
Press the DISPLAY MODE button.
Each time you press the above buttons, the indicators change as follows:

Normal indicators ←
↓
Peak level meters and margin indicators go off.
(The DISPLAY OFF indicator lights.)
↓
All the indicators go off during recording or playback*.
(The DISPLAY OFF AUTO indicator lights momentarily just before the indicators go off.)

* When pressing the MODE or DISPLAY MODE button except during recording or playback, the DISPLAY OFF AUTO indicator lights. In this case, all the indicators go off immediately after recording or playback starts.

To change the brightness of the display window
While pressing the MODE button on the front panel or the COUNTER MODE button on the remote commander, press one of the numeric buttons 1, 2 and 3. The greater number pressed, the darker the display window becomes.

1 **LONG play mode indicator**
Lights when recording or playback is being performed in the long play mode.

2 **TOC (Table Of Contents) indicator**
When a pre-recorded DAT cassette is played back, this indicator will light.

3 **DATE indicator**
Lights when the RECORDED button is pressed to display the recording day of the tape being played. Flashes when the PRESENT button is pressed to display the current time.

4 **REMAINING (remaining time):** Lights when the counter shows the remaining time of the tape.
PGM TIME (program time): Lights when the counter shows the elapsed time of the current selection.
ABS TIME (absolute time) indicator: Lights when the counter shows the elapsed time from the beginning of the tape.

5 **Time indicator**
Indicates the tape running time, absolute time, elapsed time of the current selection, remaining time or recording day. Each time the MODE button is pressed, the display is changed.

6 **Fade in/out indicator**
FADE ◄: Flashes when recording or playback fades in.
► FADE: Flashes when recording of playback fades out.

7 **AM/PM indicators**
Show AM or PM of the time.

8 **INPUT selector indicators**
The DIGITAL IN OPTICAL or COAXIAL indicator lights according to the position of the INPUT selector. No indicator lights when the INPUT selector is set to the ANALOG position.

9 **SAMPLING FREQ. (Sampling frequency) indicator**
48 kHz: For recording/playback of analog input signals (standard mode).
44.1 kHz: For recording/playback of CD or a pre-recorded DAT cassette.
32 kHz: For recording/playback of analog input signals (long-play mode).

10 **REPEAT indicators**
REPEAT 1: Lights when a desired selection is played back repeatedly.
REPEAT ALL: Lights when all the selections are played back repeatedly.

11 **AMS (Automatic Music Sensor)/RMS (Random Music Sensor) indicators**
Show the number of selections to be skipped ahead or behind in the AMS operation. When designating a selection directly by the numeric button and the ► button, the display shows the program number of the target selection while the selection is being searched for. When programming the desired selections in the RMS operation (page 39), the display shows the program number of the selection to be programmed.

12 **DISPLAY OFF/AUTO indicators**
The DISPLAY OFF indicator lights when peak level meters and margin indicators are turned off. The DISPLAY OFF AUTO indicator lights momentarily before all the indicators are turned off.

13 **SKIP PLAY indicator**
When this indicator is lit during playback, the portion marked by the skip ID is skipped and playback continues from the next start ID.

14 **MUSIC SCAN indicator**
Lights after the MUSIC SCAN button is pressed to listen to the beginning of each selection successively.

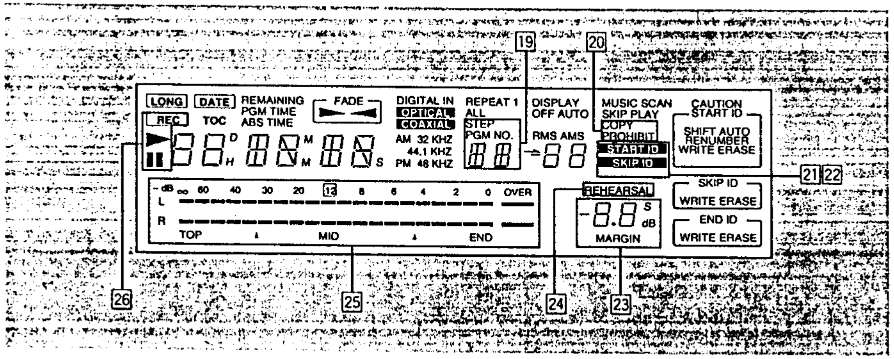
15 **CAUTION indicator**
Lights when moisture condensation occurs. If this happens, the deck stops functioning automatically. (See page 4.)

16 **START ID mode indicators**
AUTO: Lights when the AUTO button is pressed to write the start ID automatically.
RENUMBER: Lights when the RENUMBER button is pressed to renumber the program numbers.
WRITE: Lights when writing the start ID manually.
ERASE: Lights when erasing the start ID.
AUTO RENUMBER: Lights when renumbering program numbers automatically.
SHIFT RENUMBER: Lights when shifting the start ID and program number position.

17 **SKIP ID mode indicator**
WRITE: Lights when writing the skip ID.
ERASE: Lights when erasing the skip ID.

18 **END ID mode indicator**
WRITE: Lights when writing the end ID.
ERASE: Lights when erasing the end ID.

Display Window


19
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OPTICAL
COAXIAL
AM 32 KHZ
44.1 KHZ
PM 48 KHZ
D
H
M
M
S
REPEAT 1
ALL
STEP
PGM NO.
DISPLAY
OFF AUTO
RMS AMS
MUSIC SCAN
SKIP PLAY
COPY
PROHIBIT
START ID
SKIP ID
CAUTION
START ID
SHIFT AUTO
RENUMBER
WRITE ERASE
21
22
-dB ∞ 60 40 30 20 12 8 6 4 2 0 OVER
L
R
TOP
MID
END
REHEARSAL
S
dB
MARGIN
SKIP ID
WRITE ERASE
END ID
WRITE ERASE
26
25
24
23

19 **STEP/PGM NO. indicator**
Shows the program number of the selection being played. When programming the desired selection with the RMS operation (page 39), the display shows the step number of the programmed selection.

20 **COPY PROHIBIT indicator**
Lights when recording the digital signal with the copy prohibit code. In this case, record with the LINE IN jacks.

21 **START ID indicator**
Flashes when writing (for 9 or 18 seconds) or erasing a start ID code, and lights when the start ID is detected during playback.

22 **SKIP ID indicator**
Lights when writing (for 1 or 2 seconds) or erasing a skip ID code or when the skip ID is detected during playback.

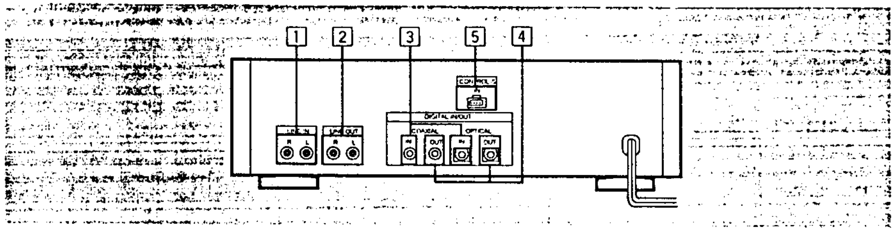
23 **MARGIN indicator**
Shows how much margin there is between the peak level of input audio signal and 0 dB.

24 **REHEARSAL indicator**
Lights while the rehearsal function is activated (page 29).

25 **Peak level meters/Frequencies map**
Indicate the signal levels during playback and recording. There are separate meters for each left and right channel. These meters have a peak hold function which indicates the peak level momentarily.
When pressing the 4 button while keeping the MODE button pressed, the sampling frequencies with which the tape was recorded is displayed.

26 **Tape operation indicators**
REC: Lights during recording or in the record-pause mode.
►: Lights during recording or playback. It also lights in the record-pause mode or in the play-pause mode.
II: Lights in the record-pause mode or in the play-pause mode.

Rear Panel Jacks


1
2
3
5
4
LINE IN
LINE OUT
R
L
CONTROL-S
DIGITAL IN/OUT
COAXIAL
OPTICAL
IN
OUT

1 **LINE IN (line input) jacks (phono jack)**
Connect to the recording outputs of an amplifier. Signals supplied by the amplifier can be recorded using the sampling frequency of 48 kHz in the standard play mode or 32 kHz in the long play mode.

2 **LINE OUT (line output) jacks (phono jack)**
Connect to the DAT or tape inputs of an amplifier. The playback signal of this deck will be output.

3 **COAXIAL/OPTICAL DIGITAL IN (digital input) jacks (coaxial phono jack/optical jack)**
Connect to the digital outputs of an amplifier having a built-in D/A converter or other digital source, such as a CD player for digital-to-digital recording.

4 **COAXIAL/OPTICAL DIGITAL OUT (digital output) jack (coaxial phono jack/optical jack)**
Connect to the digital inputs of an amplifier having a built-in D/A converter or another DAT deck, for playback of a DAT cassette or digital-to-digital recording.

5 **CONTROL-S IN jack**
Connect to the CONTROL-S output of a Sony amplifier or receiver for remote control.

Notes on connection
- Use the connecting cords specified in the illustrations.
- Turn off the power for all equipments before making connections.
- Be sure to insert the plugs firmly into the jacks. Loose connections may cause hum and noise. When unplugging, grasp the plug and not the cord.

Notes on the optical cable
- Do not bend the cord. When the cord is not used, curl it with a diameter of more than 15 cm (5 $^7/_8$ inches).
- Do not use it under high temperatures.
- When the optical cable is not connected, cover the OPTICAL IN/OUT jacks with the supplied caps.

Note on sound signals
When connecting an optical cable to the DIGITAL IN/ DIGITAL OUT jacks, sound signals (L/R) are transmitted together through the cable.

Note on the CONTROL-S IN jack
To remote control this unit through a receiver or amplifier, connect the input of this unit to the CONTROL-S output of a Sony receiver or amplifier, with a CONTROL-S cable. When this connection is used, only remote control commands sent through the receiver or amplifier will be executed. The remote sensor of this unit will not function.

Clock Setting

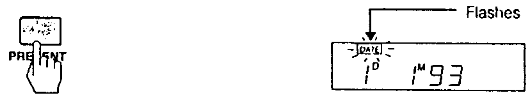
This unit employs a built-in clock to keep track of the current date and time. Once you set the date and time, this information will be recorded on the tape along with the audio signal during recording. This function is very convenient because it allows you to check when the tape was recorded when playing the tape later.

Setting the date and time

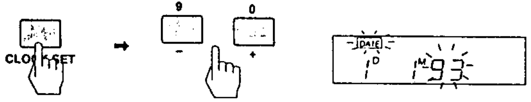
Example: Setting the clock to 10:30:00 AM, July 4, 1993 (Sunday)

Setting the day

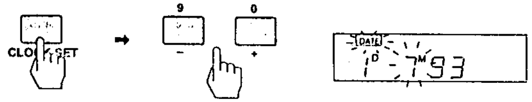
1 **Display the current date.**


PRESENT
Flashes
DATE
1D 1M93

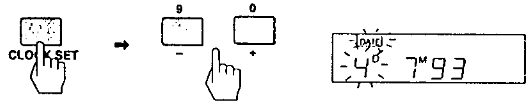
2 **Set the year.**


CLOCK SET
9
0
-
+
DATE
1D 1M93

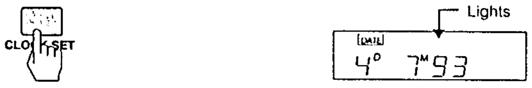
3 **Set the month.**


CLOCK SET
9
0
-
+
DATE
1D 7M93

4 **Set the day.**

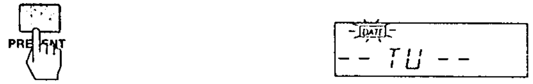

CLOCK SET
9
0
-
+
DATE
4D 7M93

5 **Complete the setting procedure.**

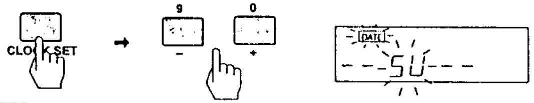

CLOCK SET
Lights
DATE
4D 7M93

Setting the day of the week

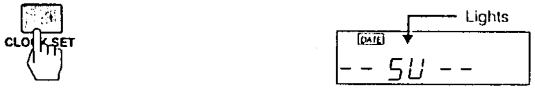
1 **Display the day of the week.**


PRESENT
DATE
-- TU --

2 **Set the day of the week.**

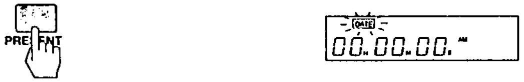

CLOCK SET
9
0
-
+
DATE
-- SU --

3 **Complete the setting procedure.**

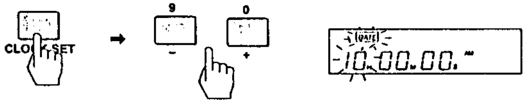

CLOCK SET
Lights
DATE
-- SU --

Setting the time

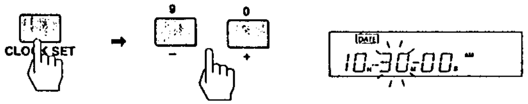
1 **Display the current time.**


PRESENT
DATE
00.00.00.AM

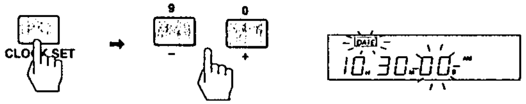
2 **Set the hour.**


CLOCK SET
9
0
-
+
DATE
10.00.00.AM

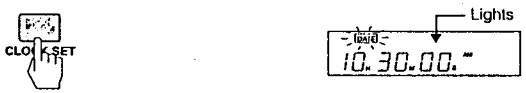
3 **Set the minutes.**


CLOCK SET
9
0
-
+
DATE
10.30.00.AM

4 **Set the seconds to 0.**


CLOCK SET
9
0
-
+
DATE
10.30.00.AM

5 **Start the clock simultaneously with the signal from a timecast (telephone, etc.).**


CLOCK SET
Lights
DATE
10.30.00.AM

To confirm the date or time
Press the PRESENT button to display the date, the day of the week or time. When pressing the PRESENT button once, the date is displayed, when pressing twice, the day of the week is displayed and when pressing three times, the time is displayed. To return to the original counter display, press the MODE button.

Time display
The time is displayed in 12-hour format.
Midnight and noon are displayed as follows:
Midnight: 12:00 AM
Noon: 12:00 PM

Built-in clock
This unit's built-in clock operates using a quartz oscillator, and time variations caused by changes in temperature, etc., may accumulate. For precise recording of hour, minute, and second data by the built-in date function, it is recommended that you set the clock once a week.

Precautions when setting the clock
- Set the clock while the tape is stopped.
- Although this unit's clock automatically adjusts for leap years and long and short months, do not enter a date which does not exist.

The day of the week is displayed as follows:

Sunday	SU
Monday	MO
Tuesday	TU
Wednesday	WE
Thursday	TH
Friday	FR
Saturday	SA

Note
This unit uses a back-up battery to keep the clock running when the power is turned off. The life of the battery under normal use is approximately seven years. When the battery starts to run down, the clock will stop operating normally. When this occurs, have the battery replaced at your dealer or nearest Sony Service Center (a battery replacement fee is required).

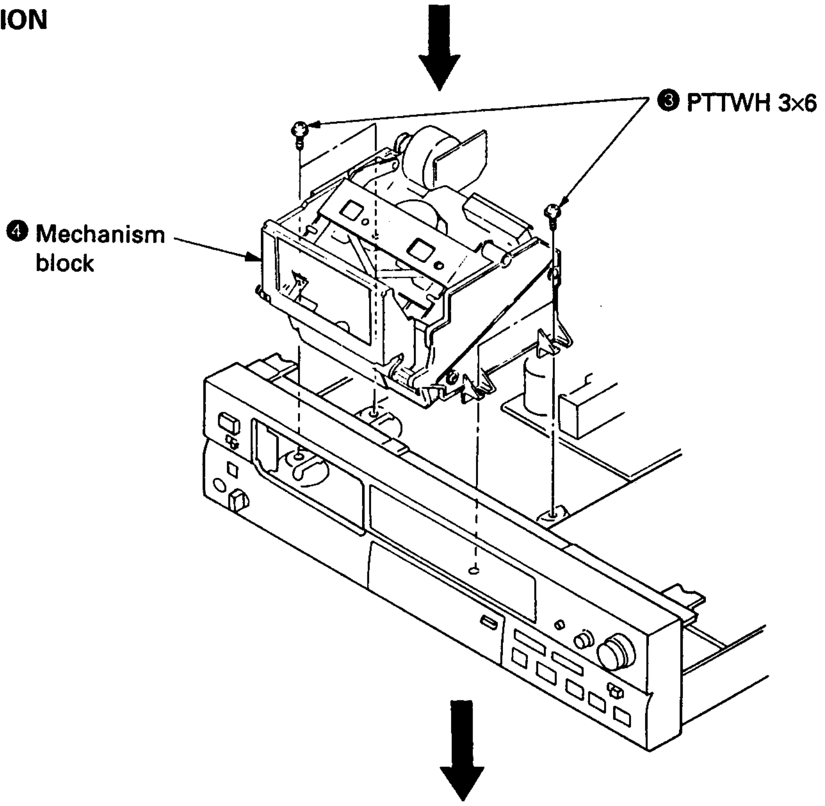
SECTION 2

DISASSEMBLY

- **Remove the following devices shown by ❶, etc. In the order of the numbers.**

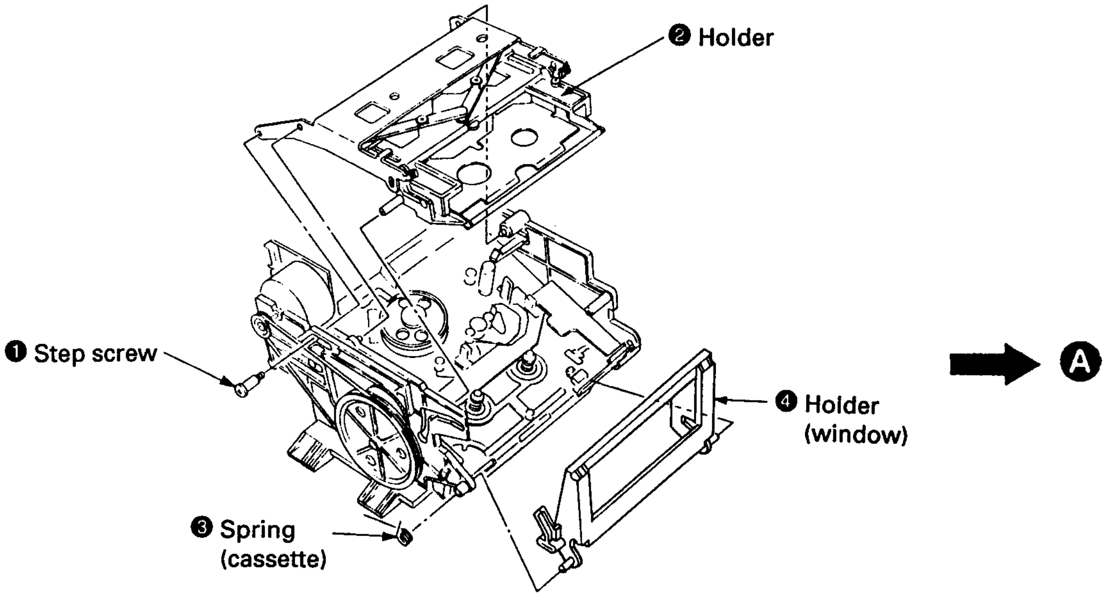
[CASE]	[CASSETTE WINDOW]
Unscrew the four case attachment screws and remove the case.	❶ Press the OPEN/CLOSE switch to effect LOADING OUT STATE (if power is not supplied) rotate the pulley in the left side of the Mechanism Deck counterclockwise.) ❷ Remove the cassette by lifting the window up.

MECHANISM SECTION



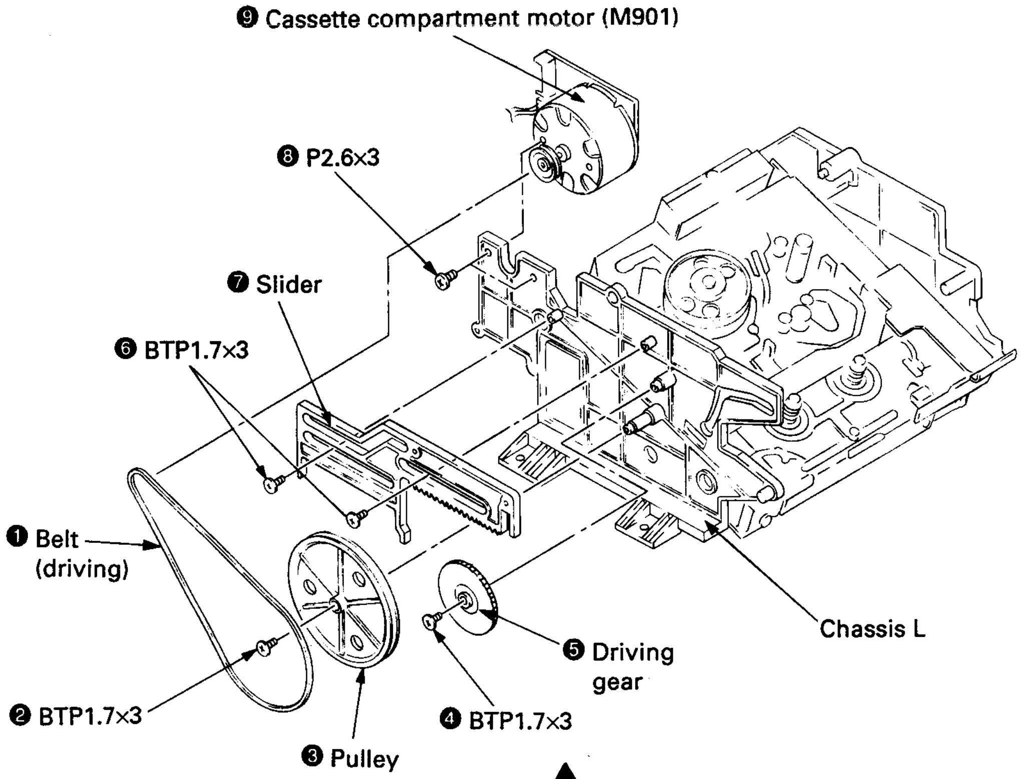
❸ PTTWH 3x6
❹ Mechanism block

HOLDER



❷ Holder
❶ Step screw
❹ Holder (window)
A
❸ Spring (cassette)

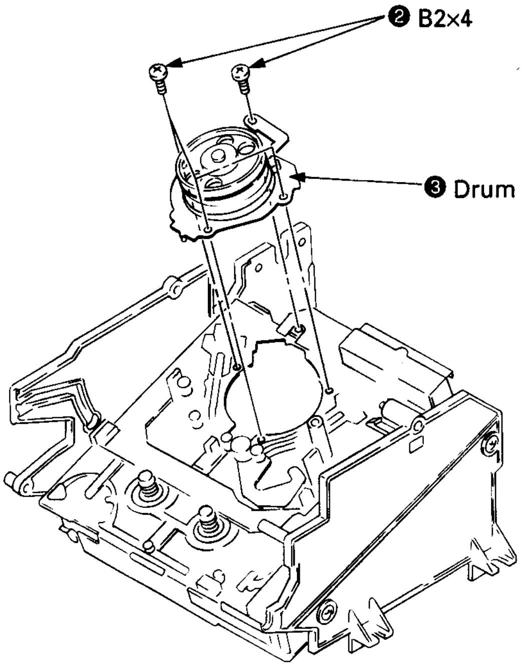
CASSETTE COMPARTMENT MOTOR (M901), PULLEY, GEAR (CAM) AND SLIDER


❾ Cassette compartment motor (M901)
❽ P2.6×3
❼ Slider
❻ BTP1.7×3
❶ Belt (driving)
❺ Driving gear
Chassis L
❷ BTP1.7×3
❹ BTP1.7×3
❸ Pulley

Ⓐ

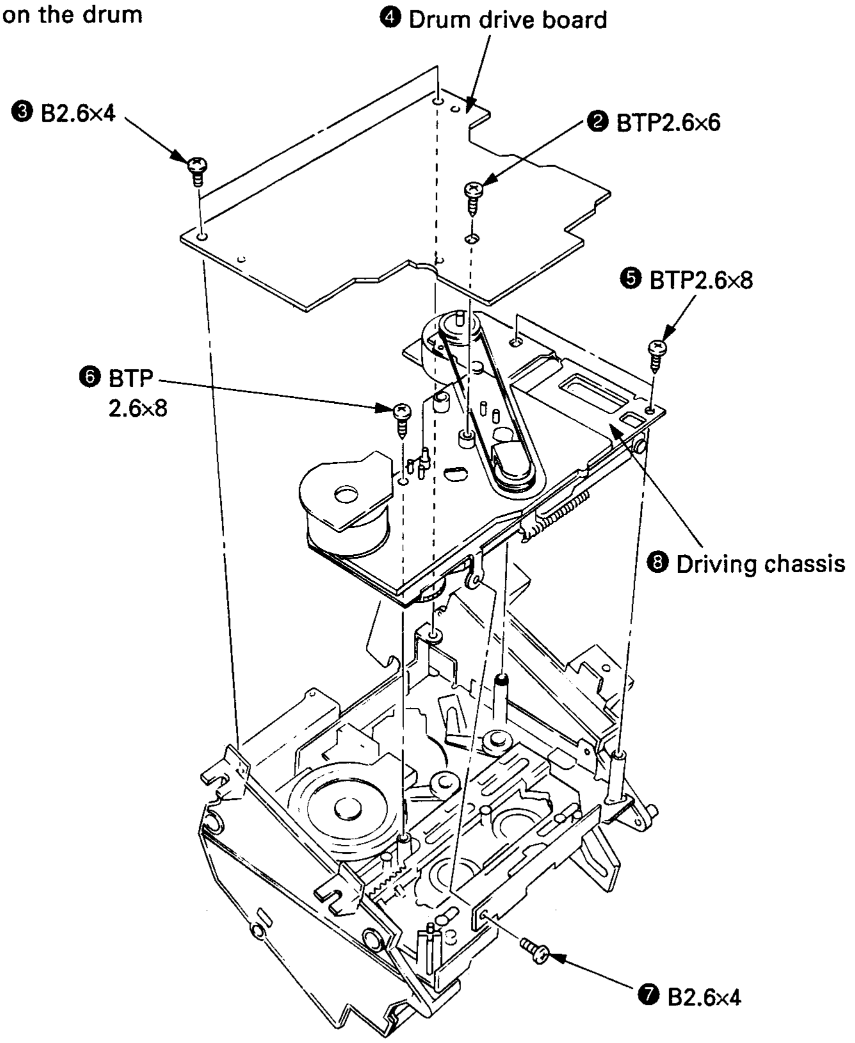
DRUM

❶ Remove the drum lead wires from connectors.

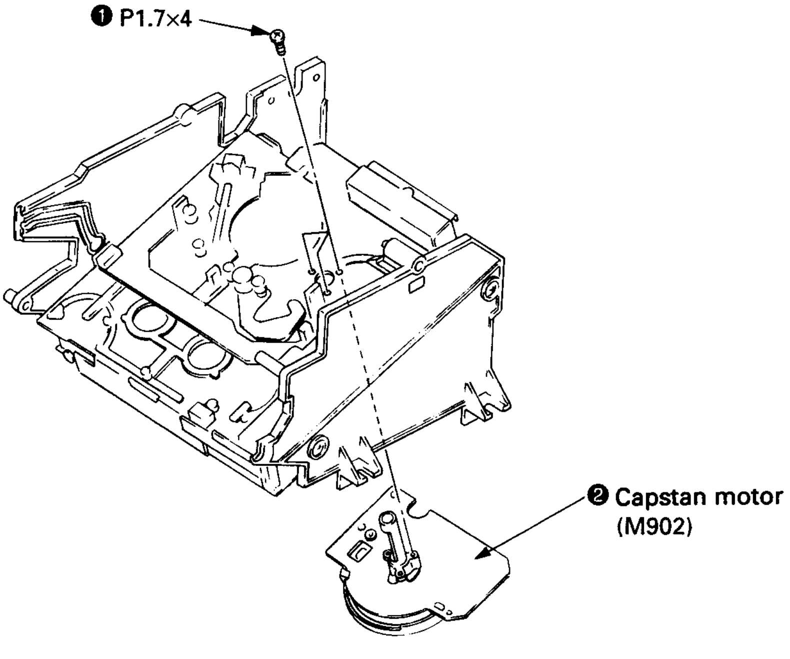


DRUM DRIVE BOARD, DRIVING CHASSIS

❶ Remove the lead wires from connectors on the drum drive board.


❹ Drum drive board
❸ B2.6×4
❷ BTP2.6×6
❺ BTP2.6×8
❻ BTP 2.6×8
❽ Driving chassis
❼ B2.6×4

CAPSTAN MOTOR (M902)


❶ P1.7×4
❷ Capstan motor (M902)

SECTION 3

ADJUSTMENTS

Notes When Making Adjustments

1. Adjustments should be performed in the order listed.
2. Use the following test tapes :

TY-7111 (8-909-812-00)	Level
TY-7252 (8-909-822-00)	Tracking
TY-7551 (8-909-814-00)	Functions
TY-30B (8-892-358-00)	Blank

Use the following torque meter:

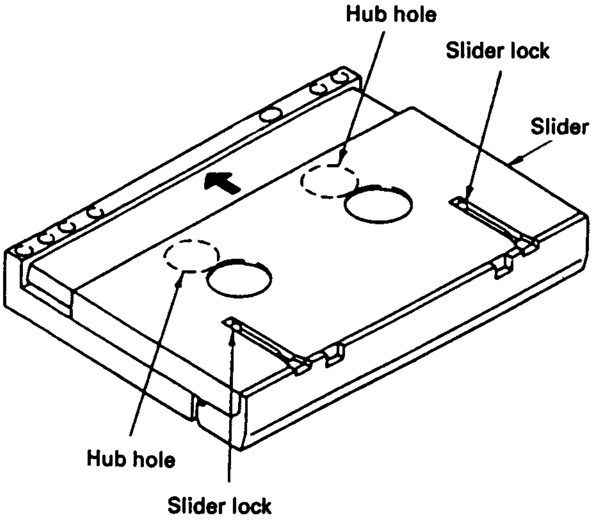
TW-7131 (8-909-708-71)	FWD

3. Switches and controls should be set as follows unless otherwise specified.

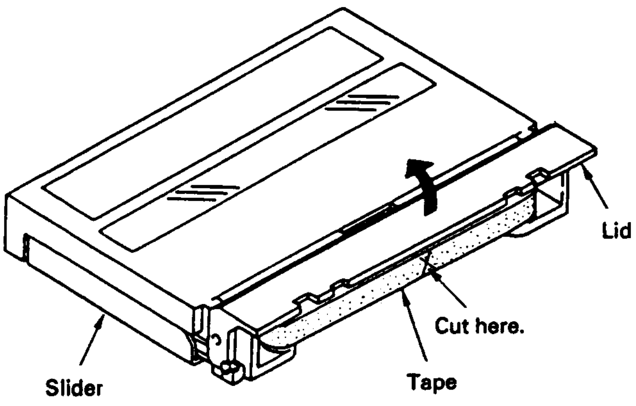
TIMER switch : OFF
REC MODE switch : LONG
INPUT switch : COAXIAL
REC LEVEL control : Min.
LEVEL (PHONES) control : Min.

4. Creating an end sensor cassette

(1) Press the tape slider lock and move the slider in the direction indicated by the arrow.



(2) Open the lid and cut the tape.



(3) Turn the hubs until the tape is completely inside the cassette (both T and S sides).
The end sensor cassette for end sensor adjustment is now ready for use.

5. Cleaning of the Revolving Drum

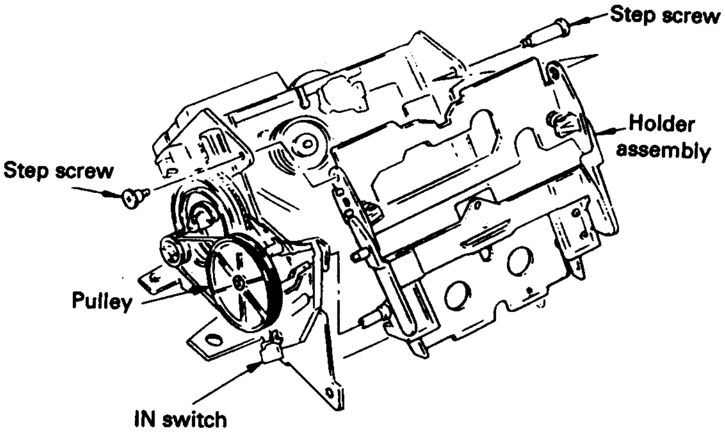
(1) Fold a chamois (2-034-697-00) or a knit cloth into 4 or more files, slightly impregnate it with a cleaning liquid (9-919-573-00), and softly touch the drum with it and manually rotate the drum slowly counterclockwise by 2 to 3 turns for cleaning.

(2) At that time, be careful not to move the chamois vertically to the head tip. Otherwise, the head tip may probably be damaged.

6. Be careful not to move RV1 and RV2 on the RF AMP board in the mechanism assembly.

7. To adjust the tape path and guides, remove the holder assembly as shown in the diagram and use the DAT holder jig (J-8000-002-A). This will make it easier to perform adjustments.

- **First turning the pulley counterclockwise to put it in loading out status will make removal and reattachment of the holder assembly easier.**
- **To perform adjustments, turn the pulley clockwise to put it in loading in status, load the cassette tape and set the IN switch to the ON position.**



8. Test mode
The test mode is effected by shorting TP (XTEST MAIN, XTEST SERVO and XTEST DISP) on the main board and the control switch board and GND.

(1) Test mode (main • servo)
Turn OFF the power switch, connect XTEST MAIN and XTEST SERVO on the main board to GND and perform the following adjustments.
- Tape path fine adjustment
- DPG adjustment
- ATF pilot (GCA) checking
- End sensor checking
- FWD torque adjustment
- FWD back tension checking and adjustment

(2) Test mode (display)
You can check the following FL display tube and the panel switch by turning OFF the power switch, disconnecting CN932 on the power board, removing flexible board CN752 on the control switch board, connecting XTEST DISP to GND, connecting CN932 again and then turning ON the power switch.

Each grid of the FL display tube sequentially lights up while all tubes being lighted up finally.

⇓

Level meters go out one after one.

⇓

Press any of the remote controller for DAT in this state. Thus, all level meters go out. (It may sometimes occur that one or two meters remain lighting up according to switch setting at that time.)

⇓

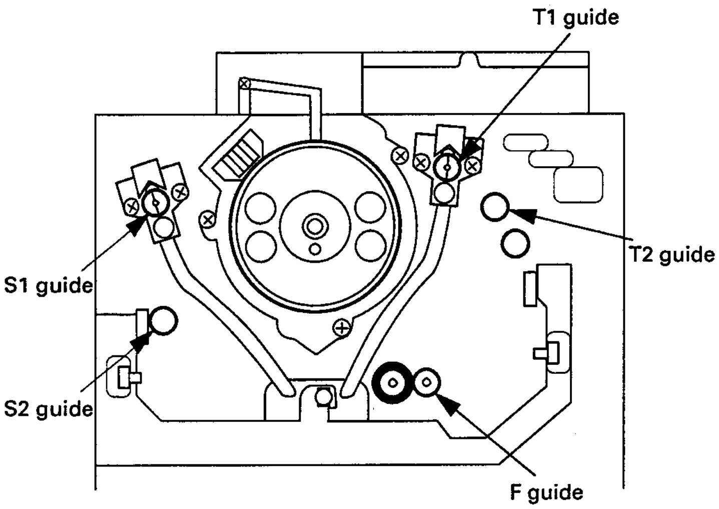
Everytime a switch on the panel is pressed, display tubes light up sequentially one after one. With all keys once pressed, all level meters go out.

- To reset the test mode, disconnect the wire shorting XTEST and GND. After completion of adjusting, be sure to reset the test mode.

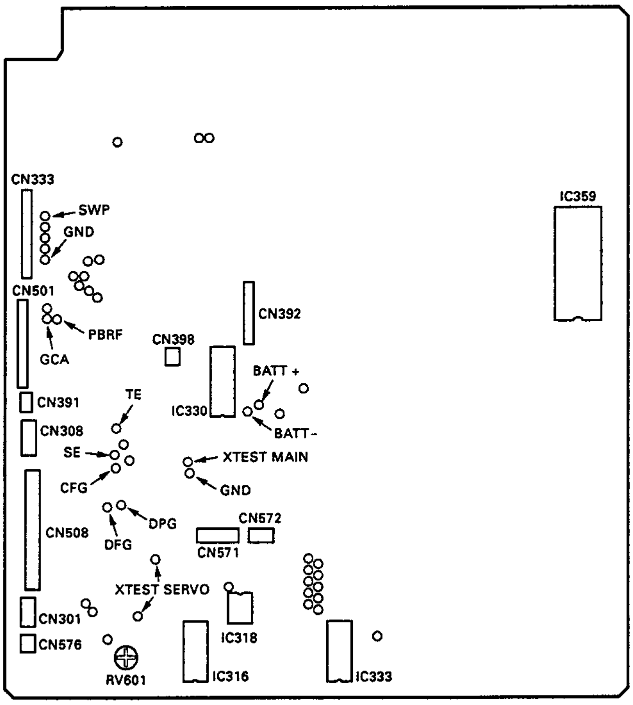
9. Check the following items for correct tape speed, after completion of adjusting.
   (1) Set the REC MODE switch to STANDARD and check for normal recording and playback. (× 1)
   (2) Set the REC MODE switch to LONG and check for normal recording and playback. (× 0.5)
   (3) With QUE (▶ + ▶▶) or REVIEW (▶ + ◀◀), check that qurrr, qurrr sound is heard. (× 3, × 8)
   (4) Check that correct time is displayed after FF (▶▶) or REV (◀◀). (× 16)
   (5) Check that SEARCH (▷▷|, |◁◁) is normal.

Adjust Parts Location

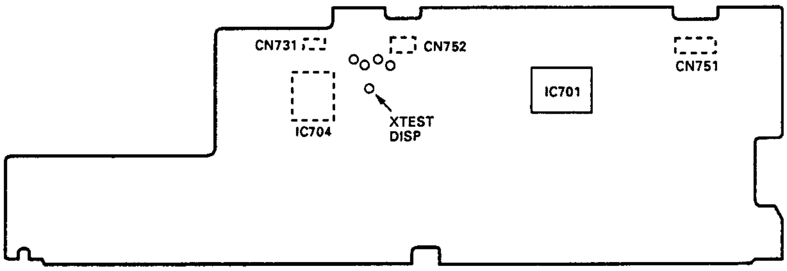
— Mechanism assembly —


T1 guide
T2 guide
S1 guide
S2 guide
F guide

— Main board —
(Component side)


CN333
SWP
GND
IC359
CN501
PBRF
GCA
CN392
CN398
BATT +
IC330
BATT-
CN391
TE
CN308
SE
XTEST MAIN
GND
CFG
DPG
CN572
CN508
DFG
CN571
XTEST SERVO
CN301
IC318
CN576
RV601
IC316
IC333

— Control SW board —
(Conductor side)


CN731
CN752
CN751
IC701
IC704
XTEST
DISP

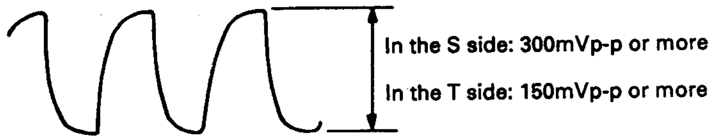
3-1. ELECTRICAL ADJUSTMENTS

End Sensor Check

Perform the following adjustment when the holder has been removed or part of the mechanism deck section replaced.

Check Procedure:

1. Connect an oscilloscope to the test land SE (in the S side) and TE (in the T side) of the main board.
2. Actuate the test mode (main • servo), mount an end sensor cassette and effect the STOP (■) mode.
3. Check that p-p values of waveform of the oscilloscope satisfy the following.


In the S side: 300mVp-p or more
In the T side: 150mVp-p or more

FWD Torque Adjustment

Adjustment Procedure:

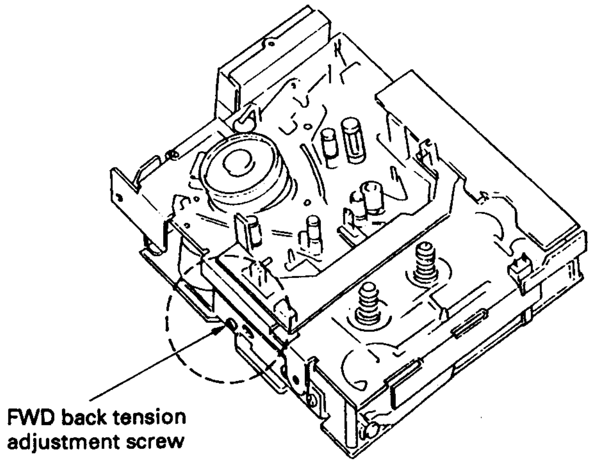
1. Put the set into the test mode (main • servo) and load the FWD torque meter TW-7131 (8-909-708-71).
2. Put the set into the PLAY (▶) mode.
3. Adjust RV601 so that the FWD torque value (take-up side rewinding torque) is between 10 – 13 g·cm (0.14 – 0.18 oz·inch).
4. Confirm that the value indicated by the torque meter is maintained for one full cycle.

Adjustment Point: MAIN board

FWD Back Tension Check and Adjustment

Check procedure:

1. Put the set into the test mode (main • servo) and load the FWD torque meter TW-7131 (8-909-708-71)
2. Put the set into the PLAY (▶) mode.
3. Confirm that the back tension (supply side) is between 5 – 6 g·cm (0.07 –0.09 oz·inch).
   If this is not satisfied, adjust back tension by rotating the FWD back tension adjustment screw equipped on the side surface of the mechanical deck. After completion of adjusting, be sure to apply screw lock.
4. Confirm that value indicated by the torque meter is maintained for one full cycle.



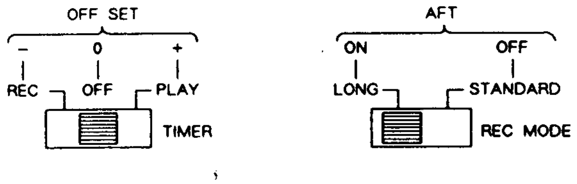
To tighten (clockwise) — back tension becomes larger.
To loosen (counterclockwise) — back tension becomes smaller.

Tape Path Fine Adjustments (× 1.5 FWD Mode)

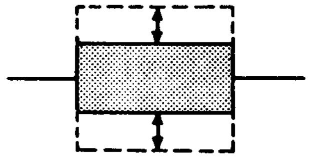
Perform the following adjustment when the drum has been replaced.

Adjustment Procedure :

1. Connect an oscilloscope CH-1 to TP (PBRF) and CH-2 to TP (SWP) on the main board.
2. Put the set into the test mode (main • servo) and load test tape TY-7252 (8-909-822-00).
3. Press the AMS (⊳⊳I) key.
   Each part of switches on Test Mode.

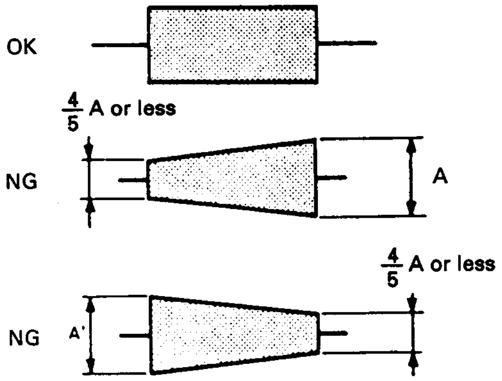


4. With the REC MODE switch set to STANDARD (ATF: OFF) and the TIMER switch set to PLAY or REC (OFFSET: + or –), fine adjust the S1 and T1 guides so that the oscilloscope RF signal waveform remains the same when high-low is repeated.

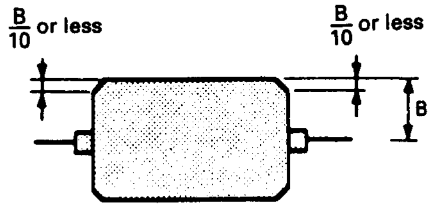


* Finish the adjustment by screwing in.

5. Check the RF signal waveform with the REC MODE switch set to LONG (ATF: ON) and the TIMER switch set to PLAY or REC (OFFSET: + or –).



6. Check the RF signal waveform with the REC MODE switch set to LONG (ATF: ON) and the TIMER switch set to PLAY or REC (OFFSET: 0).
   (1) Confirm theat the RF signal waveform peak value (B) is 60 mV or more.
   (2) Confirm that the undershoot level of the RF signal waveform's flat portion is within 10%.



7. When the measured values are not within the above toleranc repeat items 3 – 6 above.

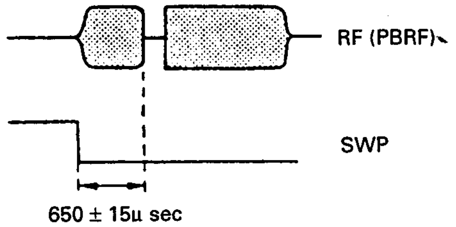
Adjustment Point: mechanism assembly

DPG Adjustment

Perform the following adjustment without fail when the drum has been replaced.

Adjustment Procedure:

1. Connect oscilloscope CH-1 to TP (PBRF) and CH-2 to TP (SWP) on the main board. (Use CH-2 as the trigger. When the CH-2 signal is inverted, the trailing edge can be used for synchronization.)
2. Put the set into the test mode (main • servo) and load test tape TY-7252 (8-909-822-00).
3. Set the REC MODE switch to LONG (ATF: ON) and the TIMER switch to OFF (OFFSET: 0).
4. Press the AMS (⊳⊳I) key.
5. Press the ◀◀ and ▶▶ keys as appropriate so that the gap between the oscilloscope SWP and RF signals becomes 650 ± 15 μsec. (Hold the ◀◀ and ▶▶ keys down for more than 1 second to perform rough adjustment. Hold them down for approximately 0.2 seconds for fine adjustment.)

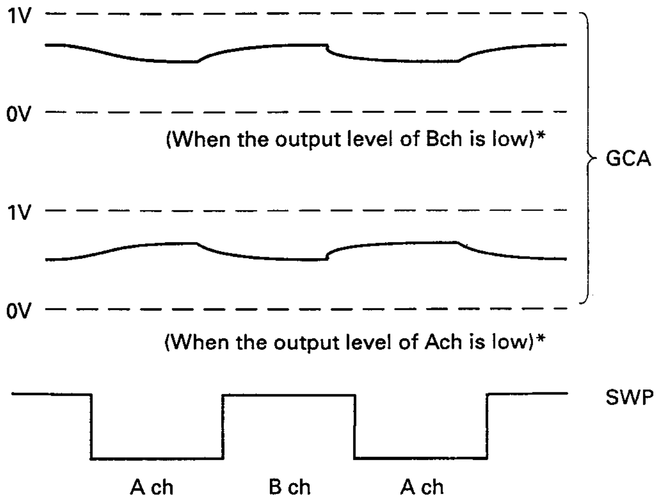


ATF Pilot (GCA) Check

Perform this adjustment after cleaning the heads with a cleaning cassette.

Check Procedure:

1. Connect oscilloscope CH-1 to TP (GCA: Gain Control Amp.) and CH-2 to TP (SWP) on the main board. (When the CH-2 signal is inverted, the trailing edge can be used for synchronization.)
2. Put the set into the test mode (main • servo) and load test tape TY-7111 (8-909-812-00).
3. Actuate the PLAY (▶) mode and check that the GCA waveform on the oscilloscope is as follows.


1V
0V
(When the output level of Bch is low)*
GCA
1V
0V
(When the output level of Ach is low)*
SWP
A ch
B ch
A ch

* Slightly changes depending on the state of the head. NG if the GCA waveform is 1V or more or equal to the GND level.

3-2. CHECKS FOR DATE FUNCTION

Clock IC Back-up Check

- When there is the short-circuit position on the pattern around the lithium battery (BAT301) or the clock IC (IC330) or disconnecting CN398 on removing the front panel assembly the clock is reset. (In spite of pressing PRESENT button, the data indication becomes “$--^{Y}--^{M}--^{D}$” “$--_{H}--_{M}--_{S}$”)
  At this time, check the back-up function by the procedures given below.

(1) Connect DC voltmeter to TP (BATT+) and TP (BATT –) on the main board.
(2) When the power is off, the voltage value of the item (1) should be less than +30 mV.
    (When the voltage value becomes +30 mV or more, Check around IC330 or replace IC330.)
(3) When the power is on, the voltage value of the item (1) should be less than 0 mV (– (minus) indication).
    (When the voltage value becomes + (plus) indication, Check around D321 or replace D321.)
(4) When the above voltage values are normal, set the preset date and time (year, month, day, day of the week, hour, minute, second) according to the instruction manual.
(5) After setting the time on the item (4), turn power off and turn power on several seconds later, and check the clock works normally.

Back-up Battery Replacement

The life of the back-up battery under normal use (normal temperature, normal humidity) is approximately ten years or more. (On the instruction manual, described “approximately seven years”.)
Be careful about the following points on the battery replacement.

- Repair the cause of the battery wastage by performing mentioned above “Clock IC Back-up Check”.
- The open-circuit voltage of the replaced battery is 3.0 V or more as the new one, and when it is 2.0 V or less, it is completely consumed, replace it with new one.
- After the battery replacement, perform “Clock IC Back-up Check” again and set the time.

Clock Frequency Adjustment

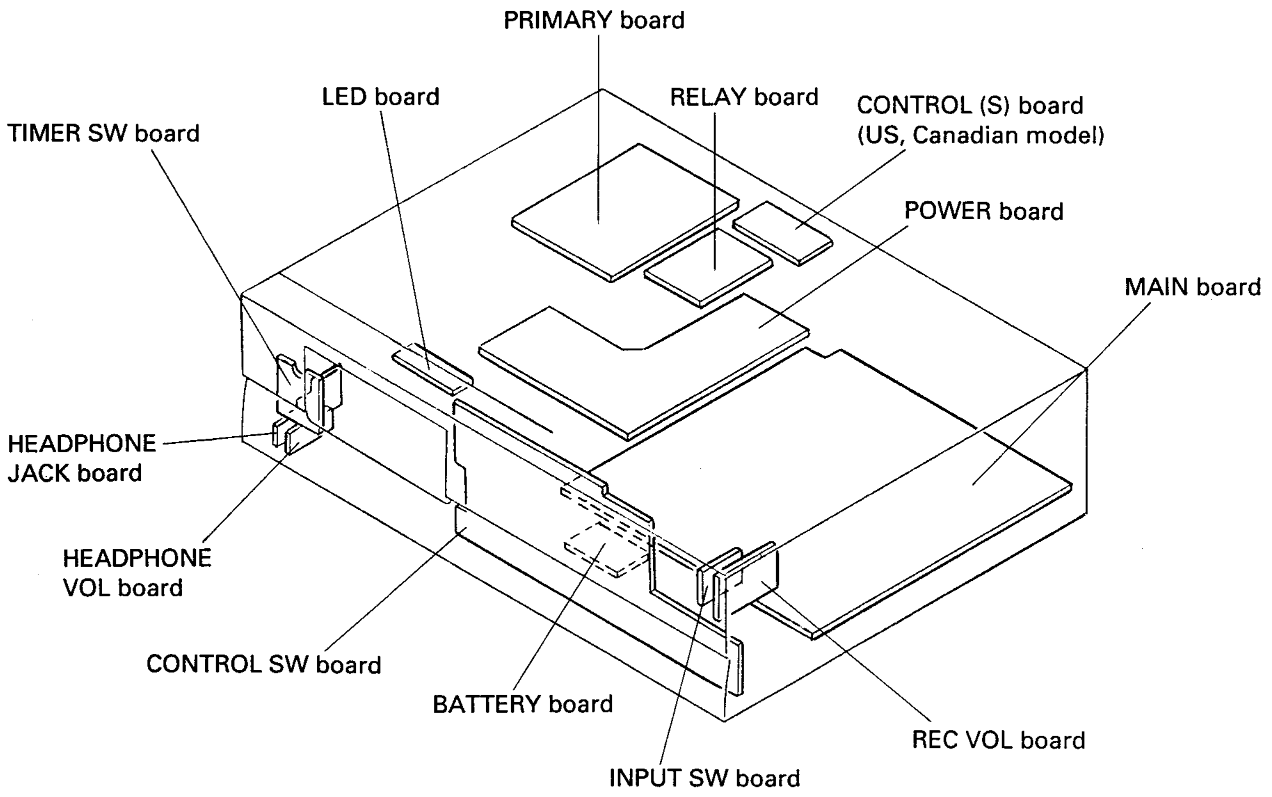
Adjustment Procedure:

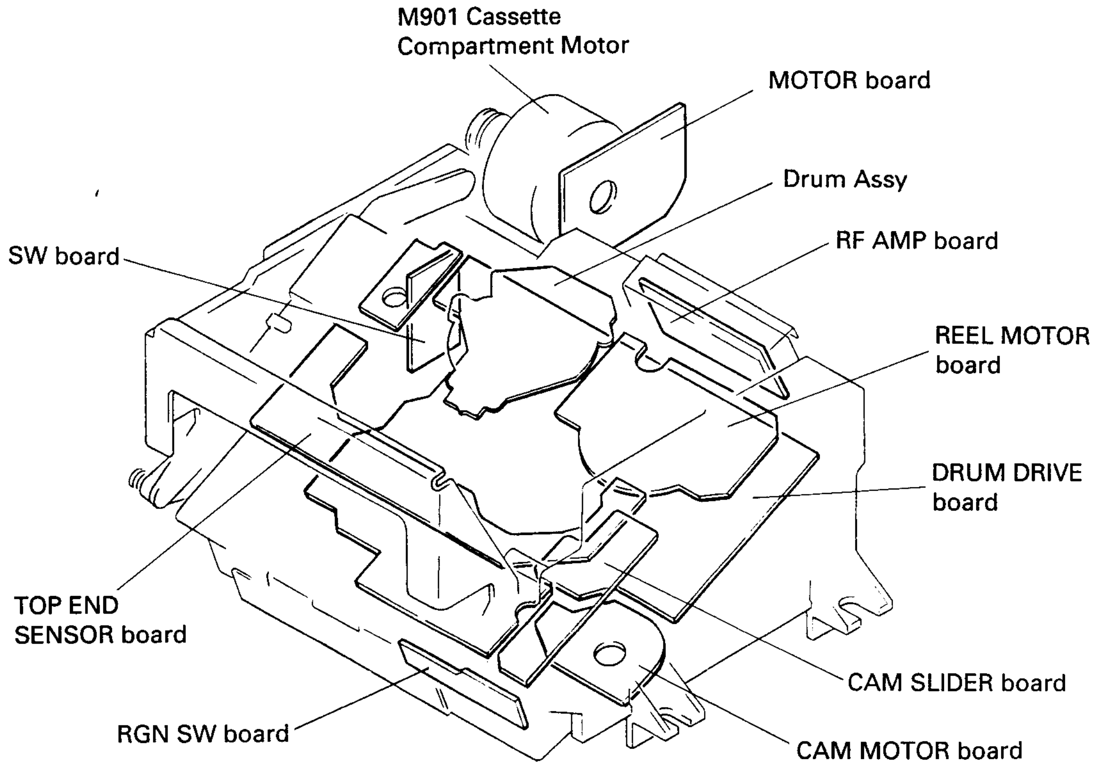
1. Connect a frequency counter to pin ⑮ of IC330 and GND on the main board.
2. Turn power on and confirm that the reading on the frequency counter is 2048.00 ± 0.02 Hz. (in normal temperature)
3. Perform “Clock IC Back-up Check” described above.

* Time setting procedure described on page 9.

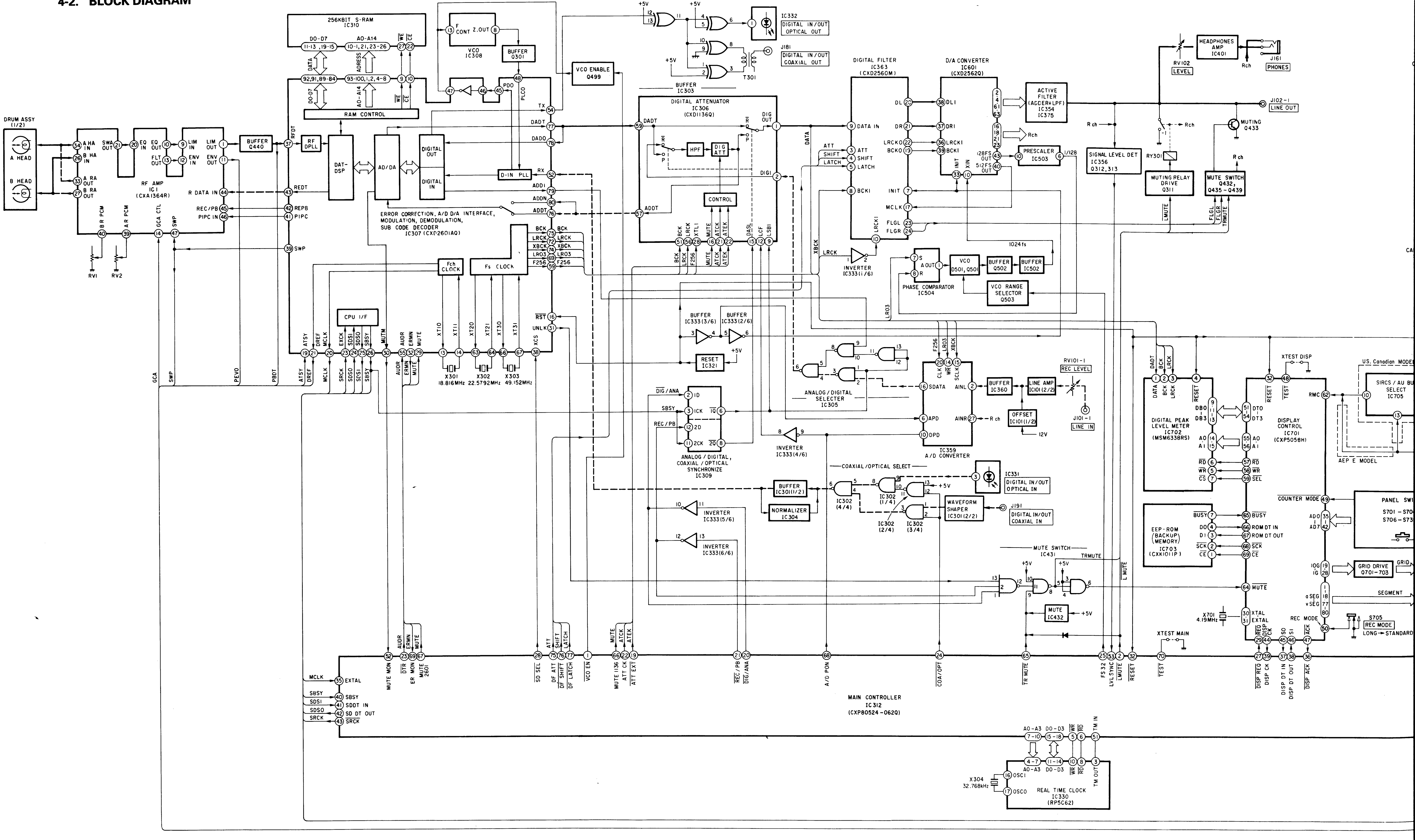
SECTION 4
DIAGRAMS

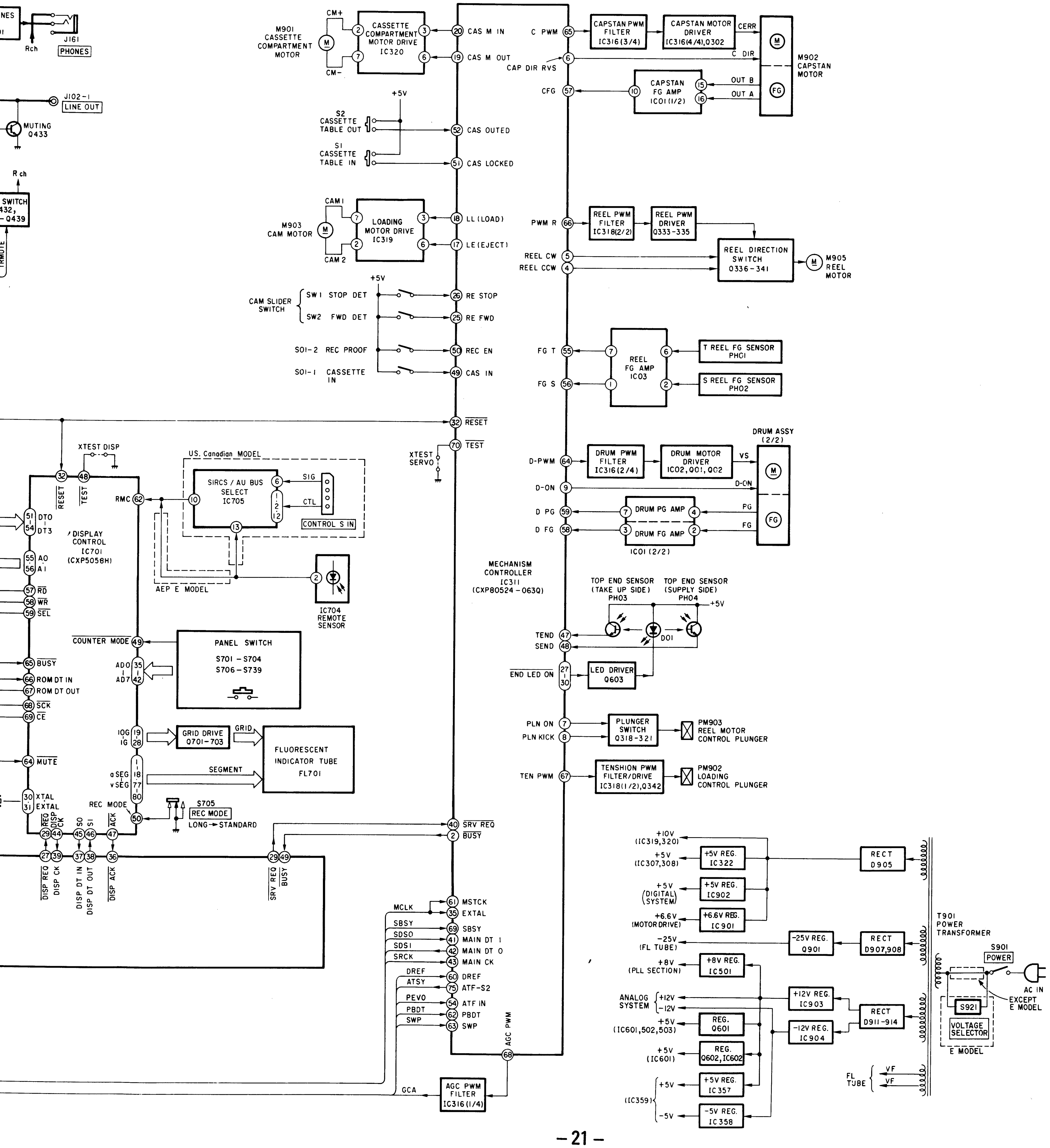
4-1. CIRCUIT BOARDS LOCATION


PRIMARY board
LED board
RELAY board
CONTROL (S) board
(US, Canadian model)
TIMER SW board
POWER board
MAIN board
HEADPHONE
JACK board
HEADPHONE
VOL board
CONTROL SW board
BATTERY board
INPUT SW board
REC VOL board

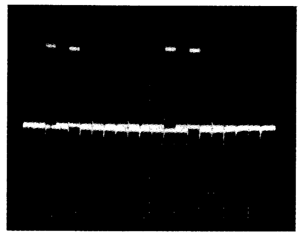

M901 Cassette
Compartment Motor
MOTOR board
Drum Assy
RF AMP board
SW board
REEL MOTOR
board
DRUM DRIVE
board
TOP END
SENSOR board
CAM SLIDER board
RGN SW board
CAM MOTOR board

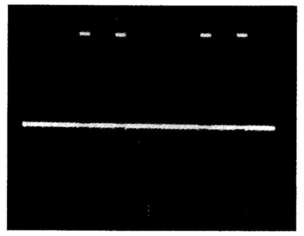
4-2. BLOCK DIAGRAM

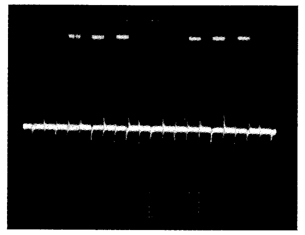

DRUM ASSY (1/2)
A HEAD
B HEAD
RF AMP IC1 (CXA1364R)
RV1
RV2
BUFFER Q440
RF DPLL
DAT-DSP
AD/DA
DIGITAL OUT
DIGITAL IN
D-IN PLL
256KBIT S-RAM IC310
D0-D7
A0-A14
RAM CONTROL
VCO IC308
BUFFER Q301
VCO ENABLE Q499
ERROR CORRECTION, A/D D/A INTERFACE, MODULATION, DEMODULATION, SUB CODE DECODER IC307 (CXD2601AQ)
Fch CLOCK
Fs CLOCK
CPU I/F
X301 18.816MHz
X302 22.5792MHz
X303 49.152MHz
BUFFER IC303
DIGITAL ATTENUATOR IC306 (CXD1136Q)
HPF
DIG ATT
CONTROL
IC332 DIGITAL IN/OUT OPTICAL OUT
J181 DIGITAL IN/OUT COAXIAL OUT
T301
DIGITAL FILTER IC363 (CXD2560M)
D/A CONVERTER IC601 (CXD2562Q)
ACTIVE FILTER (ADDER+LPF) IC354 IC375
PRESCALER IC503
INVERTER IC333(1/6)
PHASE COMPARATOR IC504
VCO D501, Q501
BUFFER Q502
BUFFER IC502
VCO RANGE SELECTOR Q503
1024fs
HEADPHONES AMP IC401
J161 PHONES
RV102 LEVEL
J102-1 LINE OUT
MUTING Q433
SIGNAL LEVEL DET IC356 Q312, 313
RY301
MUTING RELAY DRIVE Q311
MUTE SWITCH Q432, Q435-Q439
BUFFER IC333(3/6)
BUFFER IC333(2/6)
RESET IC321
ANALOG/DIGITAL SELECTER IC305
IC359 A/D CONVERTER
BUFFER IC360
LINE AMP IC101(2/2)
OFFSET IC101(1/2)
RV101-1 REC LEVEL
J101-1 LINE IN
ANALOG/DIGITAL, COAXIAL/OPTICAL SYNCHRONIZE IC309
INVERTER IC333(4/6)
INVERTER IC333(5/6)
INVERTER IC333(6/6)
BUFFER IC301(1/2)
NORMALIZER IC304
COAXIAL/OPTICAL SELECT
IC302 (4/4)
IC302 (1/4)
IC302 (2/4)
IC302 (3/4)
WAVEFORM SHAPER IC301(2/2)
IC331 DIGITAL IN/OUT OPTICAL IN
J191 DIGITAL IN/OUT COAXIAL IN
MUTE SWITCH IC431
MUTE IC432
TRMUTE
DIGITAL PEAK LEVEL METER IC702 (MSM6338RS)
DISPLAY CONTROL IC701 (CXP5058H)
EEP-ROM (BACKUP) (MEMORY) IC703 (CXK1011P)
X701 4.19MHz
XTEST DISP
XTEST MAIN
US, Canadian MODEL
SIRCS / AU BUS SELECT IC705
AEP E MODEL
COUNTER MODE
PANEL SW S701-S70 S706-S73
GRID DRIVE Q701-703
GRID
SEGMENT
S705 REC MODE LONG→STANDARD
MAIN CONTROLLER IC312 (CXP80524-062Q)
EXTAL
SBSY
SDDT IN
SD DT OUT
SRCK
MUTE MON
DTR
ER MON
MUTE 2601
SD SEL
DF ATT
DF SHIFT
DF LATCH
VCO EN
MUTE 1136
ATT CK
ATT EXT
REC/PB
DIG/ANA
A/D PON
COA/OPT
TR MUTE
FS32
LVL SYNC
LMUTE
RESET
TEST
DISP REQ
DISP CK
DISP DT IN
DISP DT OUT
DISP ACK
REAL TIME CLOCK IC330 (RP5C62)
X304 32.768kHz
OSCI
OSCO
TM OUT
TM IN
A0-A3
D0-D3
GCA
SWP
PEVO
PBDT
MCLK
SDSI
SDSO

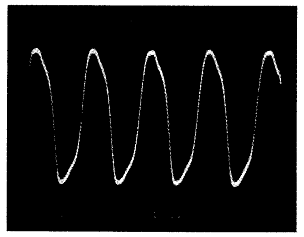

PHONES
J161
Rch
PHONES
J102-1
LINE OUT
MUTING
Q433
R ch
SWITCH
-Q439
M901
CASSETTE
COMPARTMENT
MOTOR
CM+
CM-
CASSETTE COMPARTMENT MOTOR DRIVE
IC320
CAS M IN
CAS M OUT
C PWM
C DIR
CAP DIR RVS
CFG
CAPSTAN PWM FILTER
IC316(3/4)
CAPSTAN MOTOR DRIVER
IC316(4/4),Q302
CERR
M902
CAPSTAN
MOTOR
CAPSTAN FG AMP
IC01(1/2)
OUT B
OUT A
+5V
S2
CASSETTE
TABLE OUT
S1
CASSETTE
TABLE IN
CAS OUTED
CAS LOCKED
M903
CAM MOTOR
CAM1
CAM2
LOADING
MOTOR DRIVE
IC319
LL(LOAD)
LE(EJECT)
PWM R
REEL PWM FILTER
IC318(2/2)
REEL PWM DRIVER
Q333-335
REEL CW
REEL CCW
REEL DIRECTION SWITCH
Q336-341
M905
REEL
MOTOR
CAM SLIDER
SWITCH
SW1 STOP DET
SW2 FWD DET
RE STOP
RE FWD
S01-2 REC PROOF
S01-1 CASSETTE IN
REC EN
CAS IN
FG T
FG S
REEL FG AMP
IC03
T REEL FG SENSOR
PHC1
S REEL FG SENSOR
PHO2
RESET
TEST
XTEST DISP
XTEST SERVO
DRUM ASSY (2/2)
D-PWM
DRUM PWM FILTER
IC316(2/4)
DRUM MOTOR DRIVER
IC02,Q01,Q02
VS
D-ON
D PG
D FG
DRUM PG AMP
DRUM FG AMP
IC01(2/2)
PG
FG
US, Canadian MODEL
SIRCS / AU BUS SELECT
IC705
SIG
CTL
CONTROL S IN
RMC
AEP E MODEL
IC704
REMOTE
SENSOR
DISPLAY
CONTROL
IC701
(CXP5058H)
DTO
DT3
AO
AI
RD
WR
SEL
MECHANISM
CONTROLLER
IC311
(CXP80524-063Q)
TOP END SENSOR (TAKE UP SIDE)
PHO3
TOP END SENSOR (SUPPLY SIDE)
PHO4
D01
TEND
SEND
END LED ON
LED DRIVER
Q603
COUNTER MODE
PANEL SWITCH
S701-S704
S706-S739
ADO
AD7
BUSY
ROM DT IN
ROM DT OUT
SCK
CE
MUTE
1OG
1G
GRID DRIVE
Q701-703
GRID
FLUORESCENT
INDICATOR TUBE
FL701
a SEG
v SEG
SEGMENT
XTAL
EXTAL
REC MODE
S705
REC MODE
LONG→STANDARD
DISP REQ
DISP CK
DISP DT IN
DISP DT OUT
SO
SI
DISP ACK
PLN ON
PLN KICK
PLUNGER SWITCH
Q318-321
PM903
REEL MOTOR
CONTROL PLUNGER
TEN PWM
TENSHION PWM FILTER/DRIVE
IC318(1/2),Q342
PM902
LOADING
CONTROL PLUNGER
SRV REQ
BUSY
MSTCK
EXTAL
MCLK
SBSY
SDSO
SDSI
SRCK
MAIN DT I
MAIN DT O
MAIN CK
DREF
ATSY
PEVO
PBDT
SWP
ATF-S2
ATF IN
AGC PWM
GCA
AGC PWM FILTER
IC316(1/4)
+10V (IC319,320)
+5V (IC307,308)
+5V (DIGITAL SYSTEM)
+6.6V (MOTOR DRIVE)
-25V (FL TUBE)
+8V (PLL SECTION)
ANALOG SYSTEM +12V -12V
+5V (IC601,502,503)
+5V (IC601)
(IC359) +5V -5V
+5V REG. IC322
+5V REG. IC902
+6.6V REG. IC901
-25V REG. Q901
+8V REG. IC501
+12V REG. IC903
-12V REG. IC904
REG. Q601
REG. Q602,IC602
+5V REG. IC357
-5V REG. IC358
RECT D905
RECT D907,908
RECT D911-914
T901
POWER
TRANSFORMER
S901
POWER
AC IN
EXCEPT E MODEL
S921
VOLTAGE SELECTOR
E MODEL
FL TUBE
VF

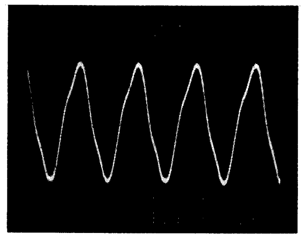
4-3. WAVEFORMS

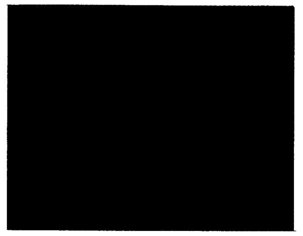

❶ FL701 ⑪-⑳pin (1G-20G)
32Vp-p, 2.5ms

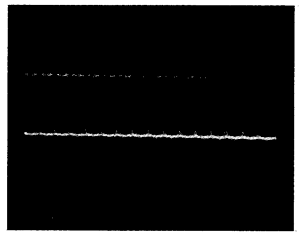

❷ IC701 ⑲-㉘pin (10G-1G)
34Vp-p, 2.45ms

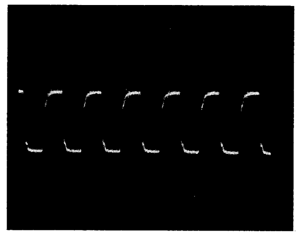

❸ IC701 (77)-(80)pin, ①-⑱pin (a-v)
38Vp-p, 1.2ms

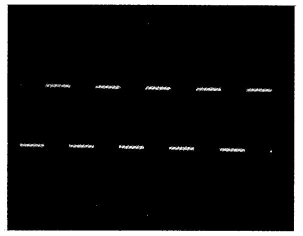

❹ IC701 ㉚pin (XTAL)
5.5Vp-p, 2.5µs

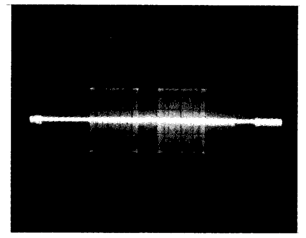

❺ IC701 ㉛pin (EXTAL)
5Vp-p, 2.5µs

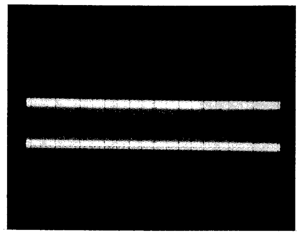

❻ IC701 ㊻pin (SI), IC312 ㊳pin (DISP DT O)
5.2Vp-p, 0.64ms

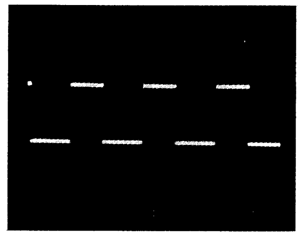

❼ IC702 ①pin (DATA)
6.4Vp-p, 0.3µs

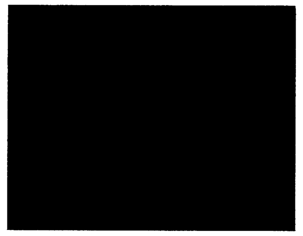

❽ IC702 ②pin (BCK)
5.2Vp-p, 0.3µs

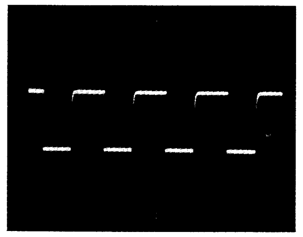

❾ IC702 ③pin (LRCK)
5.7Vp-p, 20µs

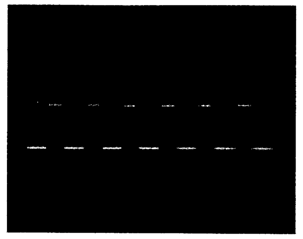

❿ IC1 ㉗ ㉝pin (HEAD)
REC mode 4.2Vp-p

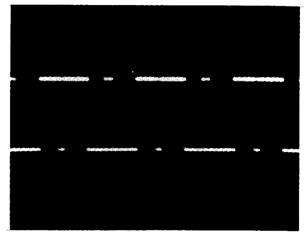

⓫ IC1 ①pin, Q440 Base (PBDT)
PLAY mode 1Vp-p

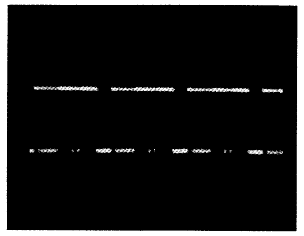

⓬ IC01 ⑩pin, IC311 (57)pin (CFG)
PLAY mode
5Vp-p, 1.5ms

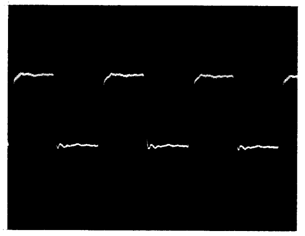

⓭ IC01 ⑦pin, IC311 (59)pin (DPG)
PLAY mode
5Vp-p, 10ms

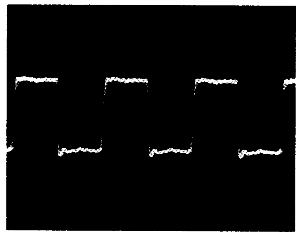

⓮ IC01 ③pin, IC311 (58)pin (DFG)
PLAY mode
5Vp-p, 1.25ms

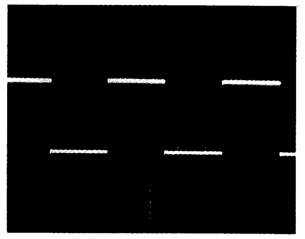

⓯ IC03 ①, ⑦pin, IC311 (56), (55)pin (FGS, FGT)
FF, REW mode 3.6Vp-p, 0.1ms

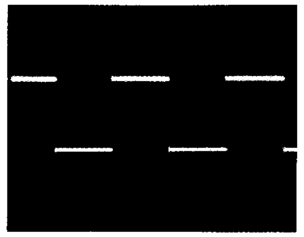

⓰ IC307 (78)pin, IC306 (59)pin (DADO)
PLAY mode
5.2Vp-p, 5µs


⓱ IC307 (76)pin, IC306 (57)pin (ADDT)
REC mode
5.2Vp-p, 5µs

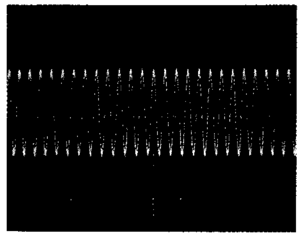

⓲ IC307 (75)pin (BCK)
5.2Vp-p, 0.1µs


⓳ IC307 (74)pin, IC359 ⑮pin (XBCK), IC363 ⑧pin (BCKI)
5.4Vp-p, 0.1µs

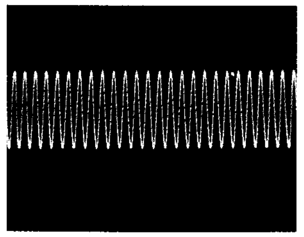

⓴ IC307 (72)pin (LRCK)
5.6Vp-p, 5µs



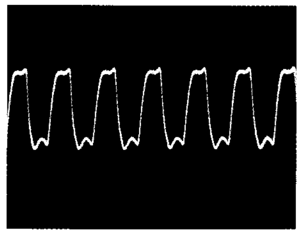
㉑ IC307 (69)pin, IC359
⑭pin (LR03)
5.6Vp-p, 5µs



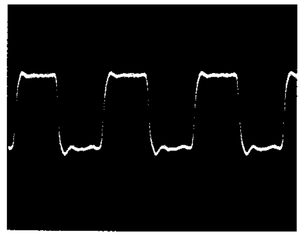
㉒ IC307 (67)pin (XT3I)
0.9Vp-p, 50ns



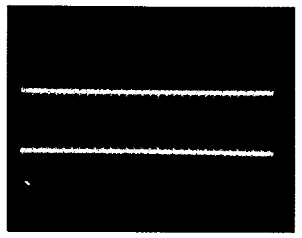
㉓ IC307 (66)pin
(X3TO)
2.9Vp-p, 50ns



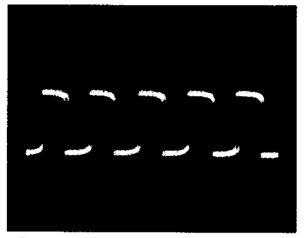
㉔ IC307 (59)pin, IC359
⑳pin (F256)
6.1Vp-p, 50ns



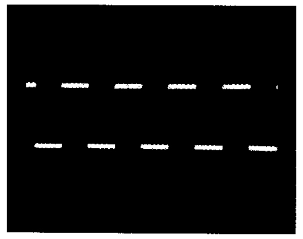
㉕ IC307 (58)pin (F128)
6Vp-p, 50ns



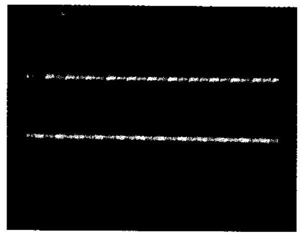
㉖ IC307 (54)pin (TX)
PLAY mode
5.3Vp-p, 0.2s



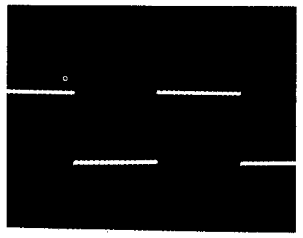
㉗ IC307 (52)pin (RX)
5.2Vp-p, 0.5ms



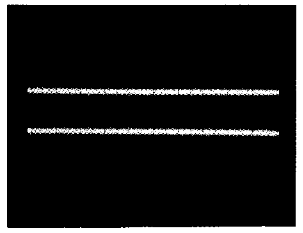
㉘ IC307 ㊽pin (PLCO)
4.8Vp-p, 0.18rns



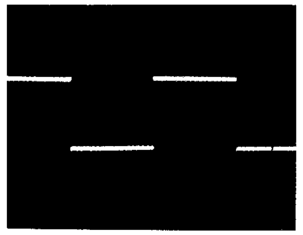
㉙ IC307 ㊸pin (REDT)
REC mode
4.4Vp-p, 0.5µs



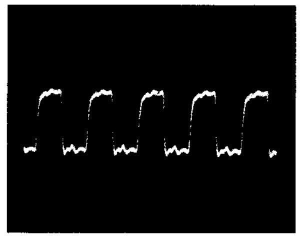
㉚ IC307 ㊴pin,
IC311 (63)pin (SWP)`
PLAY mode
5.2Vp-p, 50ms



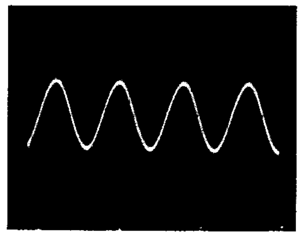
㉛ IC307 ㊲pin,
IC311 (62)pin (RFDT)
PLAY mode
1Vp-p, 10ms



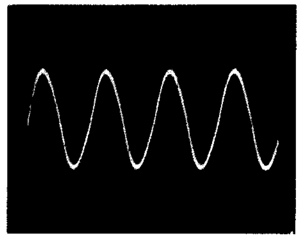
㉜ IC307 ㉑pin,
IC311 (60)pin (DREF)
5Vp-p, 5ms



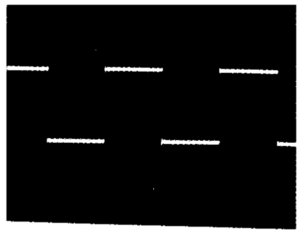
㉝ IC307 ⑳pin,
IC311 ㉟, (61)pin,
IC312 ㉟pin (MCLK)
5.8Vp-p, 50ns



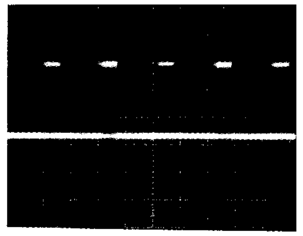
㉞ IC307 ⑭pin, (XT1I)
5.6Vp-p, 50ns



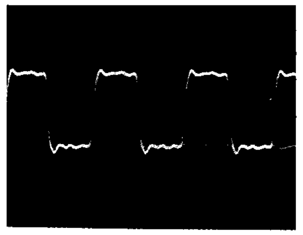
㉟ IC307 ⑬pin, (XT1O)
4Vp-p, 50ns



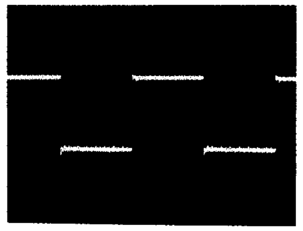
㊱ IC333 ②pin,
IC363 ⑩pin (LRCKI)
5Vp-p, 5µs



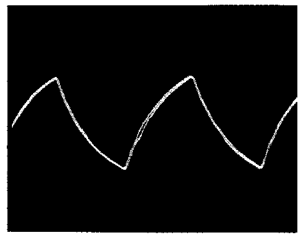
㊲ IC306 ①pin,
IC363 ⑨pin (DATAI)
5Vp-p, 5µs



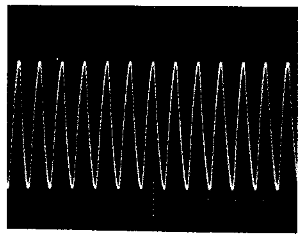
㊳ IC363 ⑳, ㉑pin
(DL, DR)
6Vp-p, 50ns



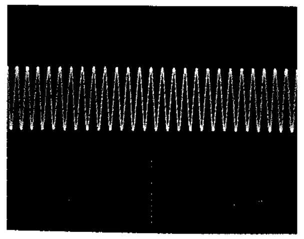
㊴ IC363 ㉒pin,
IC601 ㊱pin (LRCK)
5.3Vp-p, 0.5µs



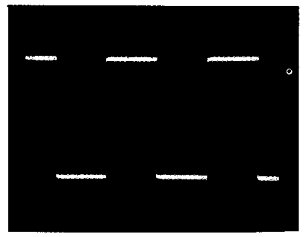
㊵ IC501 ⑩pin,
IC601 ㊸pin (128FS)
3.4Vp-p, 50ns



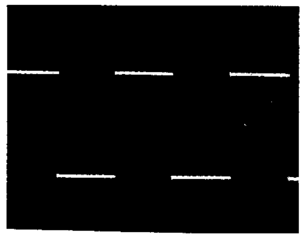
㊶ IC601 ㊵pin,
IC363 ⑰pin (512FS)
4.5Vp-p, 50ns



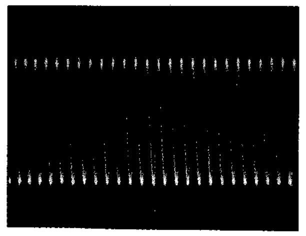
㊷ IC601 ⑩pin (1024FS)
2.4Vp-p, 50ns



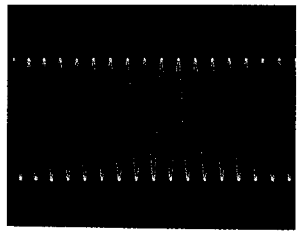
㊸ IC504 ⑦pin
(LRCKI)
4Vp-p, 5µs



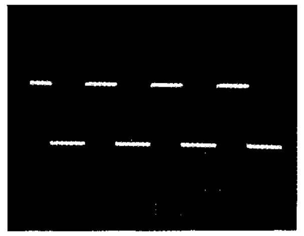
㊹ IC504 ⑧pin
(1/512FS)
4Vp-p, 5µs



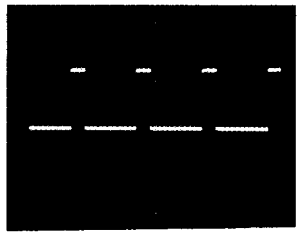
㊺ Q501 Source
(VCO)
1.2Vp-p, 50ns



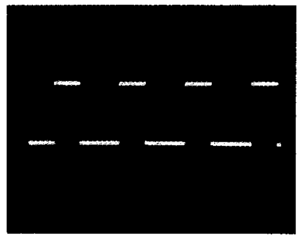
㊻ Q502 Source
(VCO)
2.3Vp-p, 50ns



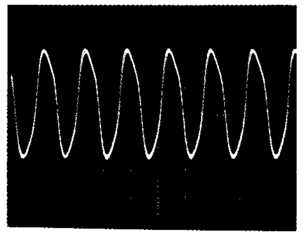
㊼ IC311 (64)pin
(D PWM)
PLAY mode
5Vp-p, 10µs



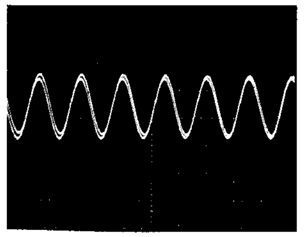
㊽ IC311 (65), (66)pin
(C PWM, PWMR)
PLAY mode
5Vp-p, 10µs



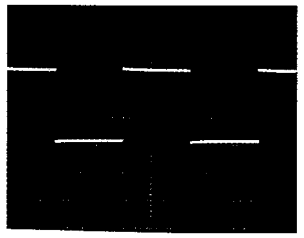
㊾ IC311 (67), (68)pin
(TEN PWM, AGC PWM)
PLAY mode
5Vp-p, 10µs



㊿ IC330 ⑰pin
(XOUT)
2Vp-p, 20µs



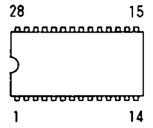
(51) IC330 ⑯pin
(XIN)
1.2Vp-p, 20µs



(52) IC330 ⑮pin
(XINTR)
5.2Vp-p, 0.1µs

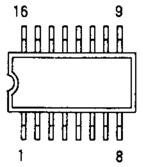
4-4. SEMICONDUCTOR LEAD LAYOUTS

CS5339-KP



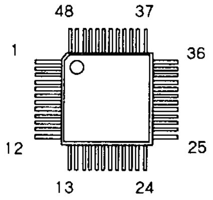
(TOP VIEW)

CX20115A
SN74HC4020ANS



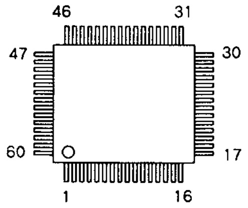
(TOP VIEW)

CXA1364R


48
37
1
36
12
25
13
24

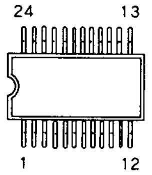
(TOP VIEW)

CXD1136Q


46
31
47
30
60
17
1
16

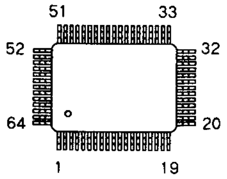
MARKING SIDE VIEW

CXD2560M



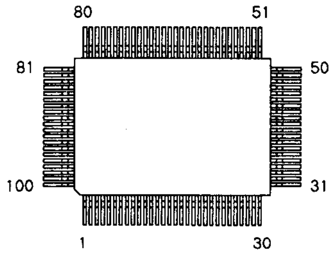
(TOP VIEW)

CXD2562Q

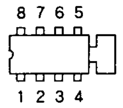

51
33
52
32
64
20
1
19

(TOP VIEW)

CXD2601AQ

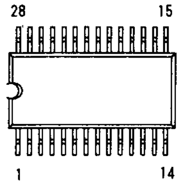

80
51
81
50
100
31
1
30

CXK1011P



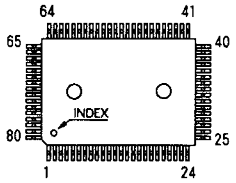
(TOP VIEW)

CXK58257AM-12L

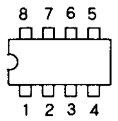


(TOP VIEW)

CXP5058H-659Q
CXP80524-062Q
CXP80524-063Q

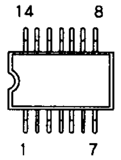

64
41
65
40
INDEX
80
25
1
24

LF412CN
M5238P
NE5532P
RC4558P
μPC358C



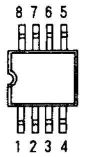
(TOP VIEW)

LM324N
SN74HC00ANS
SN74HC04ANS
SN74HC10ANS
SN74HC74ANS



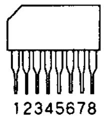
(TOP VIEW)

LM358M

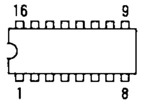


(TOP VIEW)

M5218AL
M54641L

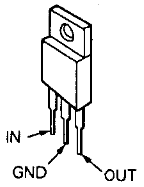


MSM6338RS

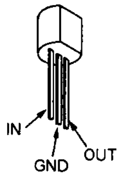


(TOP VIEW)

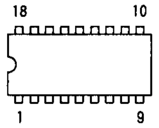
M5F7808
TA7805S
TA7812S
μPC2406HF



PST572C
PST572E

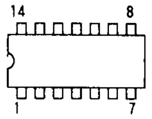


RP5C62



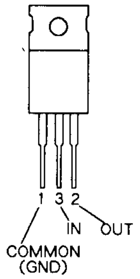
(TOP VIEW)

SN74HC00AN
SN74HCU04AN
SN74HC86AN
SN74LS624N
μPD4011BC

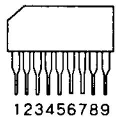


(TOP VIEW)

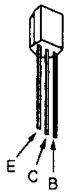
TA79005S
TA79012S


1 3 2
IN
OUT
COMMON
(GND)

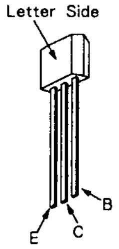
TC5081AP



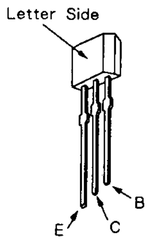
DTA114ES
DTC114ES
2SC2603-EF



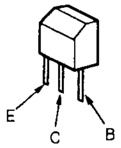
2SA1175-HFE
2SC3623A-K


Letter Side
E
C
B

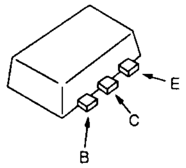
2SA1585S-QR
2SC4115S-QR


Letter Side
B
E
C

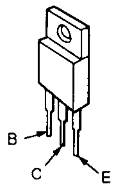
2SB734-34
2SB774-34



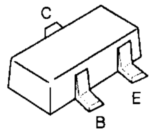
2SB798-DL



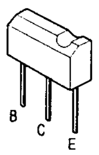
2SB1094-LK
2SD2012



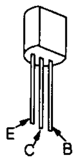
2SC1623-L5L6



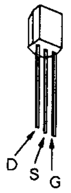
2SC2021-Q



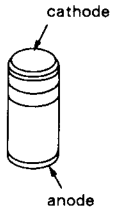
2SD1387-3



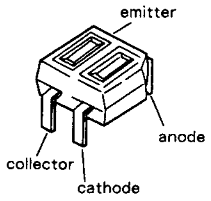
2SK241-GR



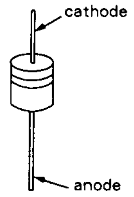
GL-453S


cathode
anode

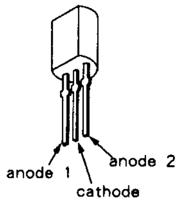
GP2S09-C


emitter
anode
collector
cathode

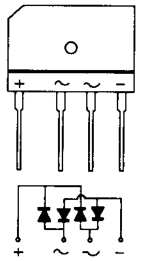
HZS6A1L
HZS24-3L
RD4.7JS-B3
RD5.1JS-B2
1SS106
1SS168
1SS202-1
10E2N
11ES2


cathode
anode

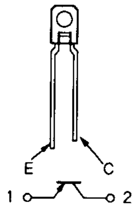
KV1310


anode 1
anode 2
cathode

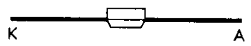
RBA406B



PT4850F

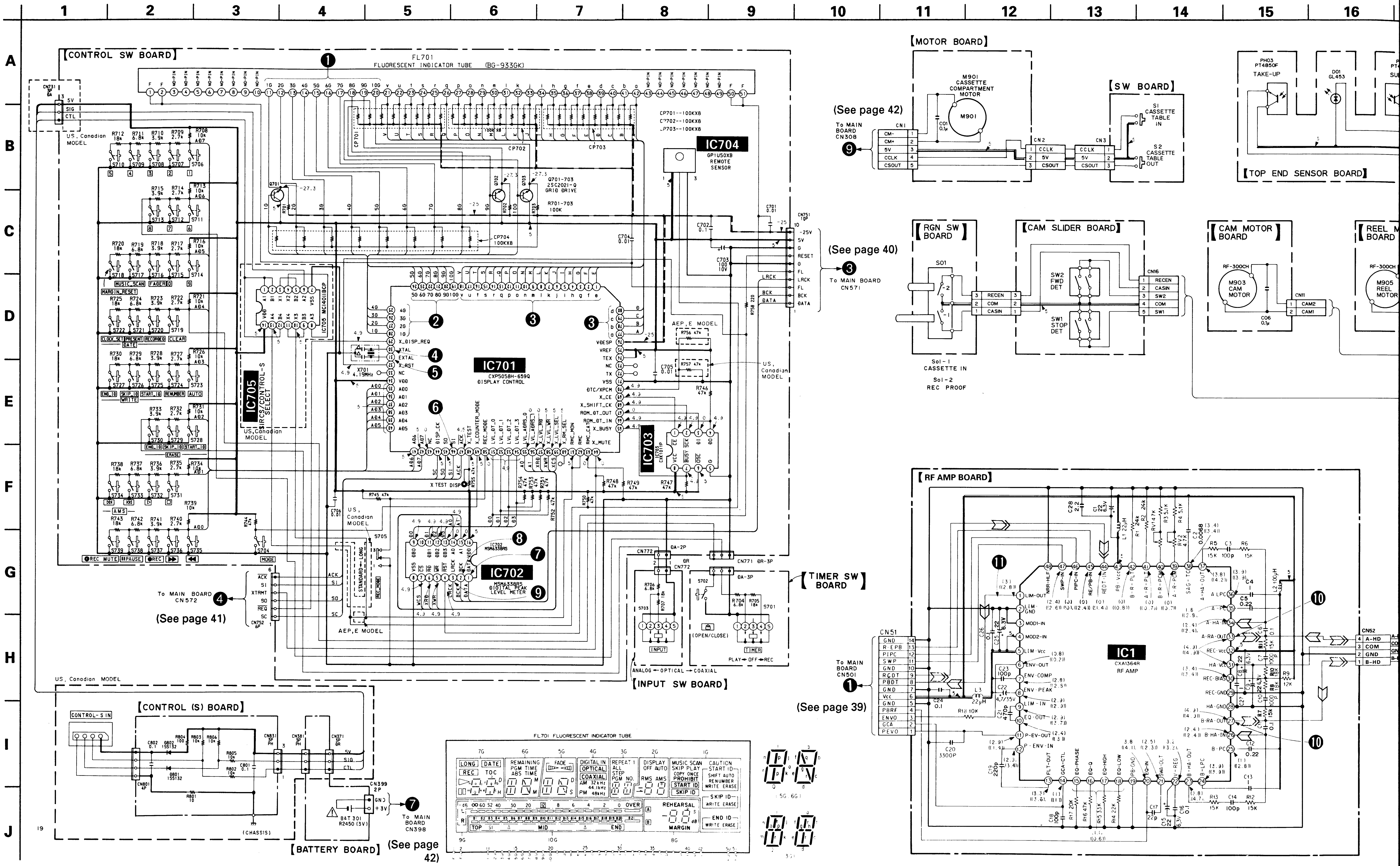


LN01401C(Q)-3-LF

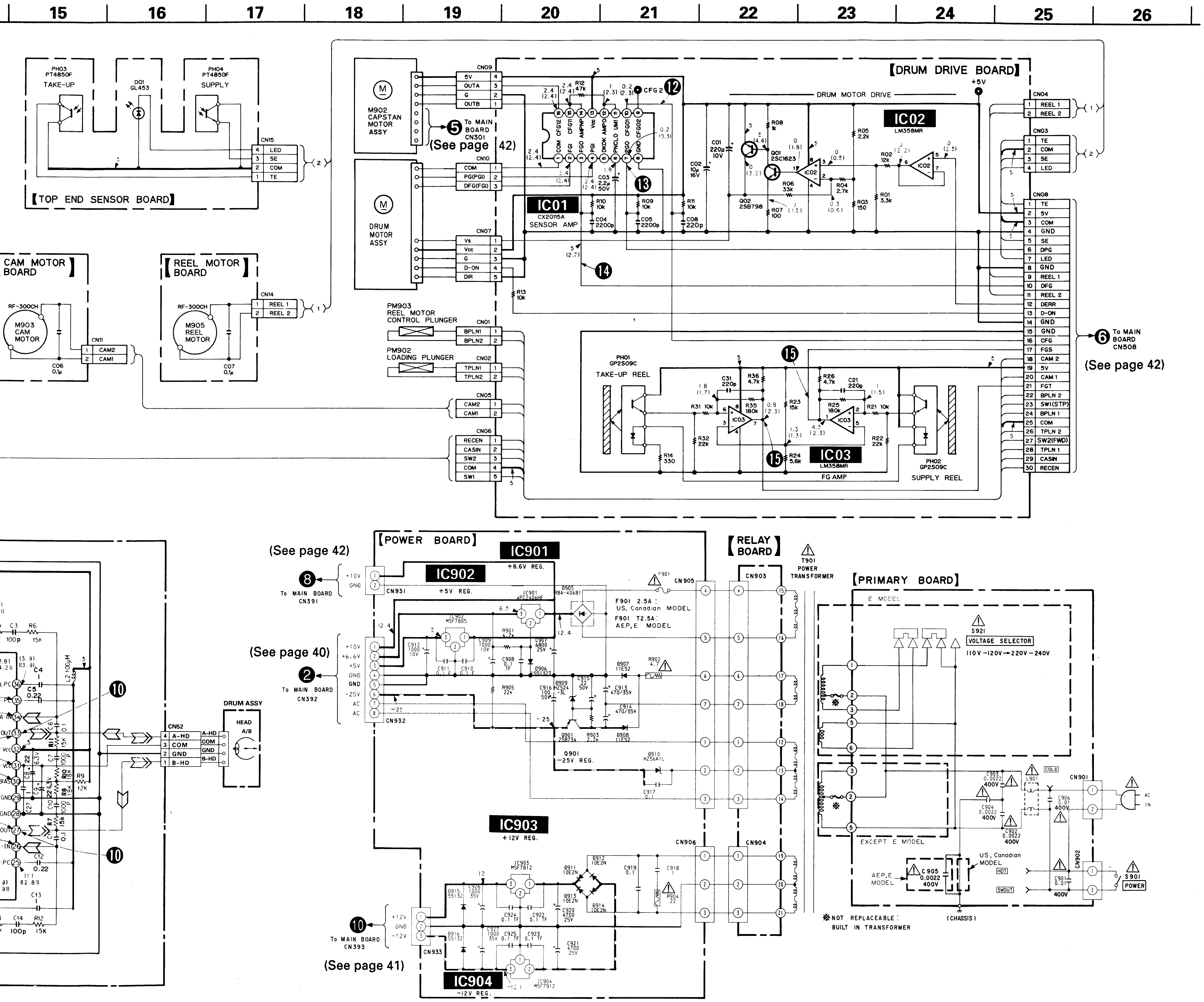


4-5. SCHEMATIC DIAGRAM – MD/POWER SUPPLY/DISPLAY SECTION –

- See page 22 for waveforms, 43 for IC block diagrams and 46 for pin functions.



CONTROL SW BOARD
FL701 FLUORESCENT INDICATOR TUBE (BG-933GK)
IC704 GP1U50XB REMOTE SENSOR
IC701 CXP5058H-659Q DISPLAY CONTROL
IC702 MSM6338RS DIGITAL PEAK LEVEL METER
IC703 CXK1011P
IC705 MC14011BCP SIRCS/CONTROL-S SELECT
Q701-703 2SC2021-Q GRID DRIVE
R701-703 100K
CP701--100KX8
CP702--100KX8
CP703--100KX8
CP704 100KX8
X701 4.19MHz
US, Canadian MODEL
AEP, E MODEL
To MAIN BOARD CN572
(See page 41)
To MAIN BOARD CN571
(See page 40)
INPUT SW BOARD
ANALOG → OPTICAL → COAXIAL
TIMER SW BOARD
PLAY → OFF → REC
(OPEN/CLOSE)
CONTROL (S) BOARD
CONTROL-S IN
BATTERY BOARD
B4T 301 R2450 (3V)
To MAIN BOARD CN398
(See page 42)
(CHASSIS)
FL701 FLUORESCENT INDICATOR TUBE
MOTOR BOARD
M901 CASSETTE COMPARTMENT MOTOR
To MAIN BOARD CN308
(See page 42)
SW BOARD
S1 CASSETTE TABLE IN
S2 CASSETTE TABLE OUT
TOP END SENSOR BOARD
PH03 PT4850F TAKE-UP
D01 GL453
RGN SW BOARD
Sol-1 CASSETTE IN
Sol-2 REC PROOF
CAM SLIDER BOARD
SW2 FWD DET
SW1 STOP DET
CAM MOTOR BOARD
M903 CAM MOTOR
REEL M BOARD
M905 REEL MOTOR
RF AMP BOARD
IC1 CXA1364R RF AMP
To MAIN BOARD CN501
(See page 39)
CN51
CN52
A-HD
COM
GND
B-HD


15
16
17
18
19
20
21
22
23
24
25
26
PH03 PT4850F TAKE-UP
D01 GL453
PH04 PT4850F SUPPLY
CN15
LED
SE
COM
TE
【TOP END SENSOR BOARD】
M902 CAPSTAN MOTOR ASSY
CN09
5V
OUTA
G
OUTB
To MAIN BOARD CN301
(See page 42)
CN10
COM
PG(PGI)
DFG(FGI)
M DRUM MOTOR ASSY
CN07
Vs
Vcc
G
D-ON
DIR
【DRUM DRIVE BOARD】
+5V
DRUM MOTOR DRIVE
IC01
CX20115A
SENSOR AMP
CFG2
IC02
LM358MR
Q01 2SC1623
Q02 2SB798
R08 1k
R05 2.2k
R02 12k
R04 2.7k
R03 150
R01 3.3k
R06 33k
R07 100
C01 220μ 10V
C02 10μ 16V
C03 2.2μ 50V
C04 2200p
C05 2200p
C08 220p
R09 10k
R10 10k
R11 10k
R12 47k
R13 10k
CN04
REEL 1
REEL 2
CN03
TE
COM
SE
LED
CN08
TE
5V
COM
GND
SE
DPG
LED
GND
REEL 1
DFG
REEL 2
DERR
D-ON
GND
GND
CFG
FGS
CAM 2
5V
CAM 1
FGT
BPLN 2
SW1(STP)
BPLN 1
COM
TPLN 2
SW2(FWD)
TPLN 1
CASIN
RECEN
To MAIN BOARD CN508
(See page 42)
CAM MOTOR BOARD
RF-300CH
M903 CAM MOTOR
CN11
CAM2
CAM1
C06 0.1μ
REEL MOTOR BOARD
RF-300CH
M905 REEL MOTOR
C07 0.1μ
CN14
REEL 1
REEL 2
PM903 REEL MOTOR CONTROL PLUNGER
CN01
BPLN1
BPLN2
PM902 LOADING PLUNGER
CN02
TPLN1
TPLN2
CN05
CAM2
CAM1
CN06
RECEN
CASIN
SW2
COM
SW1
PH01 GP2S09C TAKE-UP REEL
PH02 GP2S09C SUPPLY REEL
IC03
LM358MR
FG AMP
R31 10k
R32 22k
R35 180k
R36 4.7k
R14 330
R23 15k
R24 5.6k
R25 180k
R26 4.7k
R21 10k
R22 22k
C31 220p
C21 220p
DRUM ASSY
HEAD A/B
CN52
A-HD
COM
GND
B-HD
R9 12K
C3 100p
R6 15K
C5 0.22
C12 0.22
C13
C14 100p
R12 15K
(See page 42)
To MAIN BOARD CN391
(See page 40)
To MAIN BOARD CN392
To MAIN BOARD CN393
(See page 41)
【POWER BOARD】
IC901
+6.6V REG.
IC902
+5V REG.
CN931
CN932
+10V
GND
+6.6V
+5V
-25V
AC
IC901 μPC2406HF
IC902 M5F7805
D905 RBA-406B1
F901 2.5A: US, Canadian MODEL
F901 T2.5A: AEP,E MODEL
CN905
R901 4.7k
R902 4.7
C907 4800 25V
C912 1000 10V
C909 1000 10V
C908 0.1
C911 0.1
C910 0.1
D906 SS1427
D907 11ES2
D908 11ES2
D909 HZS24
C913 470/35V
C914 470/35V
C915 22 50V
C916 100 50V
Q901 2SB734
R903 2.2k
R905 22k
Q901 -25V REG.
D910 HZS6A1L
C917 0.1
IC903
+12V REG.
IC903 M5F7812
IC904
-12V REG.
IC904 M5F7912
CN933
CN906
D911 10E2N
D912 10E2N
D913 10E2N
D914 10E2N
D915 SS132
D916 SS132
C918
C919 0.1
C920 4700 25V
C921 4700 25V
C922 0.1
C923 0.1
C924 0.1
C925 0.1
C926 1000 35V
C927 1000 35V
R904 22
【RELAY BOARD】
CN903
CN904
T901 POWER TRANSFORMER
【PRIMARY BOARD】
E MODEL
S921 VOLTAGE SELECTOR
110V-120V→220V-240V
EXCEPT E MODEL
C903 0.0022 400V
C904 0.0022 400V
C902 0.0022 400V
C905 0.0022 400V
C901 0.01 400V
C906 0.01 400V
L901
AEP,E MODEL
US, Canadian MODEL
CN901
CN902
AC IN
S901 POWER
(CHASSIS)
※NOT REPLACEABLE: BUILT IN TRANSFORMER

Notes on schematic diagram:

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in ohms, 1/4W or less unless otherwise noted.
- △ : Internal component
- ⏛: Fuse resistor

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

- ━━━ : B + Line
- ■■■■ : B – Line
- Voltage are dc with respect to ground under no-signal (STOP) conditions.

No mark : Stop
( ) : PLAY
(( )) : REC
< > : FF
<< >> : REW
[ ] : MOMENTARILY WHEN ▶▶,◀◀ and ▶ BUTTON IS PRESSED.
[[ ]] : MUTING

- Voltages are taken with a VOM (input impedance 10MΩ).
  Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Waveforms are taken with a oscilloscope.
  Voltage variations may be noted due to normal production tolerances.
- Signal path
  ∑> : PB
  ∑>> : REC

● SEMICONDUCTOR LOCATION

Ref. No.	Location
D01	F-22
D801	B-2
D802	A-2
D905	I-10
D906	I-8
D907	J-9
D908	J-9
D909	I-8
D910	J-10
D911	H-10
D912	H-11
D913	H-10
D914	H-11
D915	J-11
D916	I-11
IC1	F-14
IC01	G-18
IC02	G-19
IC03	H-20
IC701	D-8
IC702	E-10
IC703	D-10
IC704	D-5
IC705	E-5
IC901	I-7
IC902	J-7
IC903	I-10
IC904	I-11
PH01	I-19
PH02	I-19
PH03	I-22
PH04	F-22
Q01	G-19
Q02	G-19
Q701	D-7
Q702	D-7
Q703	D-7
Q901	I-9

Notes on printed wiring board:

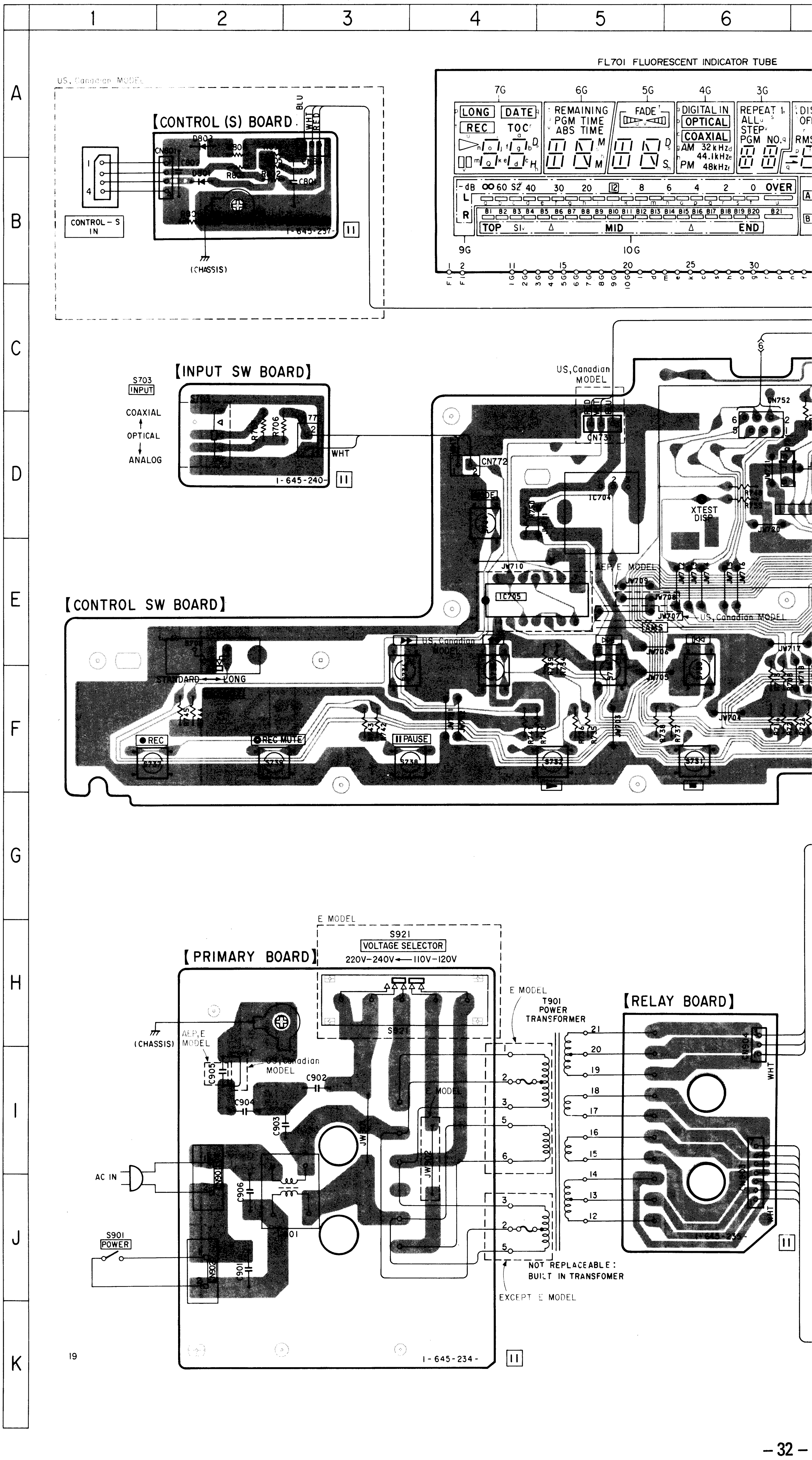
- o——: Indicated a lead wire mounted on the component side.
- ■ : Parts mounted on the conductor side
- ● : Through hole
- ▨ : Pattern from the side which enables seeing

(The other layers' patterns are not indicated.)

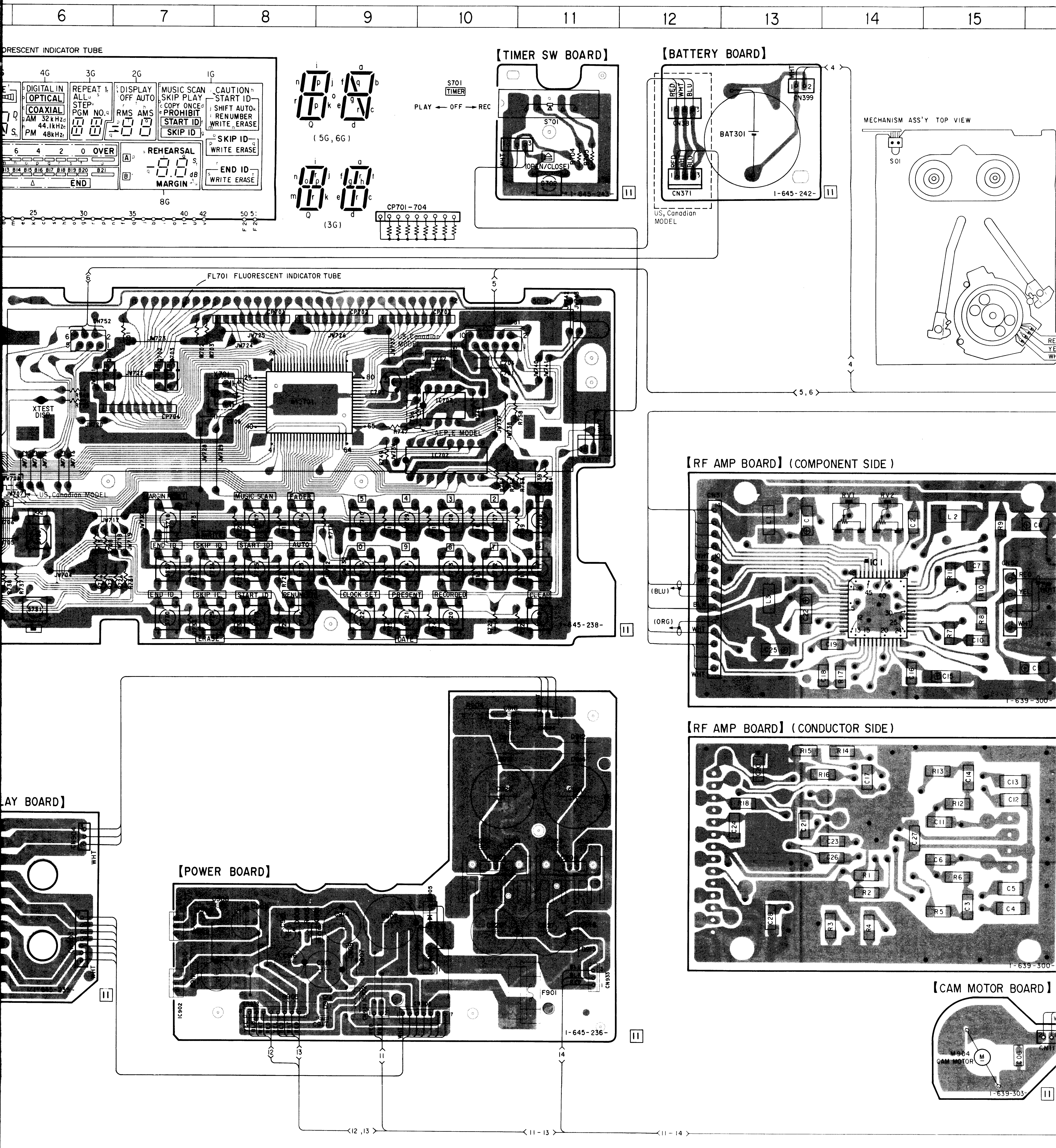
Caution:	
Pattern face side: (Conductor side)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Component side)	Parts on the parts face side seen from the parts face are indicated.

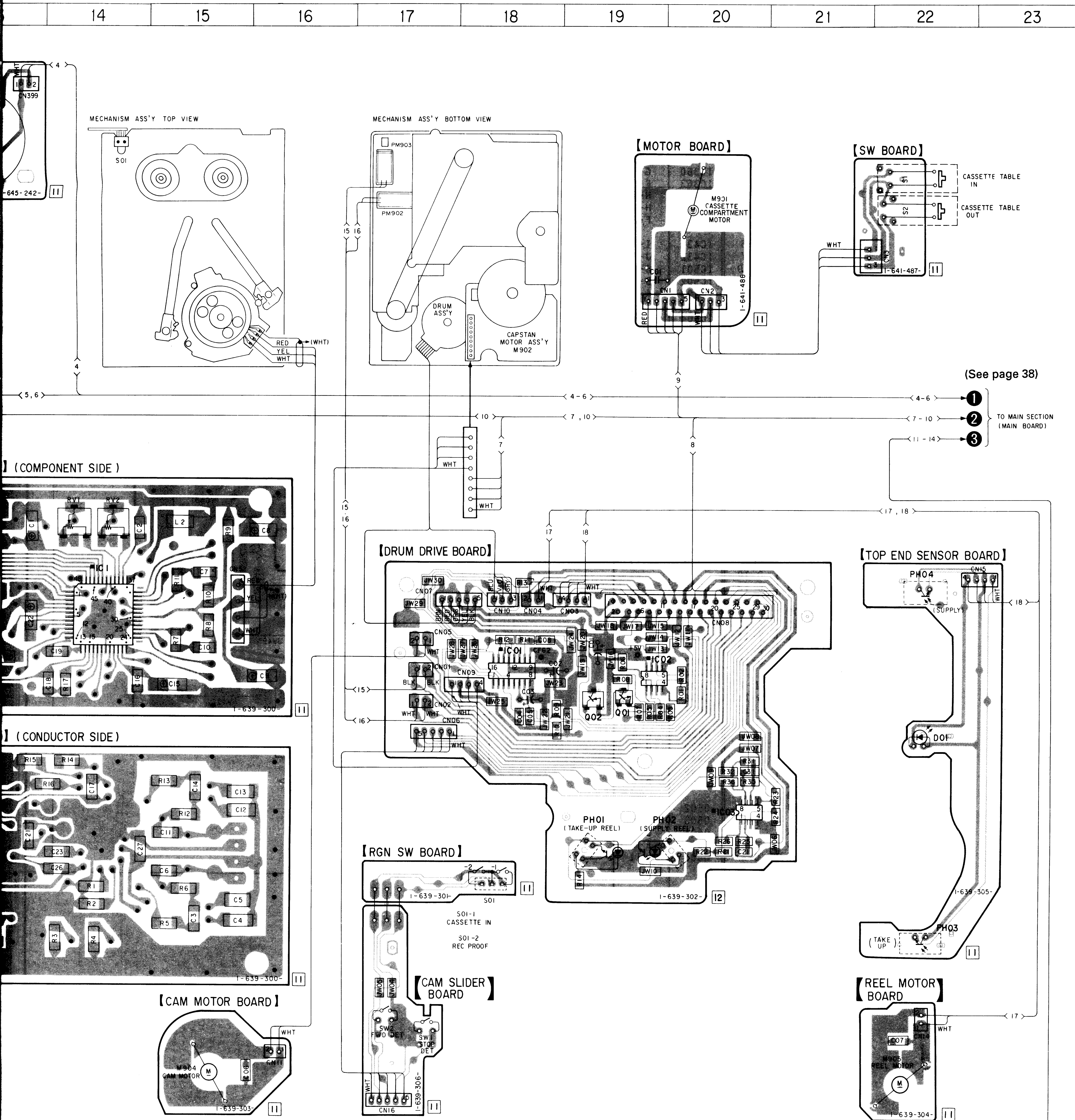
4-6. PRINTED WIRING BOARDS – MD/POWER SUPPLY/DISPLAY SECTION –

• See page 18 for circuit boards lo


1
2
3
4
5
6
A
B
C
D
E
F
G
H
I
J
K
FL701 FLUORESCENT INDICATOR TUBE
US, Canadian MODEL
[CONTROL (S) BOARD]
CONTROL – S IN
(CHASSIS)
1-645-237-
11
BLU
WHT
RED
LONG
DATE
REC
TOC
REMAINING
PGM TIME
ABS TIME
FADE
DIGITAL IN
OPTICAL
COAXIAL
REPEAT 1
ALL
STEP
PGM NO.
AM 32kHz
44.1kHz
PM 48kHz
-dB ∞ 60 52 40 30 20 12 8 6 4 2 0 OVER
L
R
TOP
MID
END
9G
10G
[INPUT SW BOARD]
S703
INPUT
COAXIAL
OPTICAL
ANALOG
WHT
1-645-240-
11
US, Canadian MODEL
CN772
IC704
XTEST
DISP
JW710
IC705
AEP, E MODEL
[CONTROL SW BOARD]
STANDARD ←→ LONG
● REC
● REC MUTE
II PAUSE
E MODEL
S921
VOLTAGE SELECTOR
220V-240V ←— 110V-120V
[PRIMARY BOARD]
(CHASSIS)
AEP, E MODEL
US, Canadian MODEL
C902
C904
C903
C905
C906
C901
AC IN
S901
POWER
E MODEL
T901
POWER TRANSFORMER
NOT REPLACEABLE : BUILT IN TRANSFOMER
EXCEPT E MODEL
[RELAY BOARD]
WHT
1-645-234-
11
19

e 18 for circuit boards location and 25 for semiconductor lead layouts.

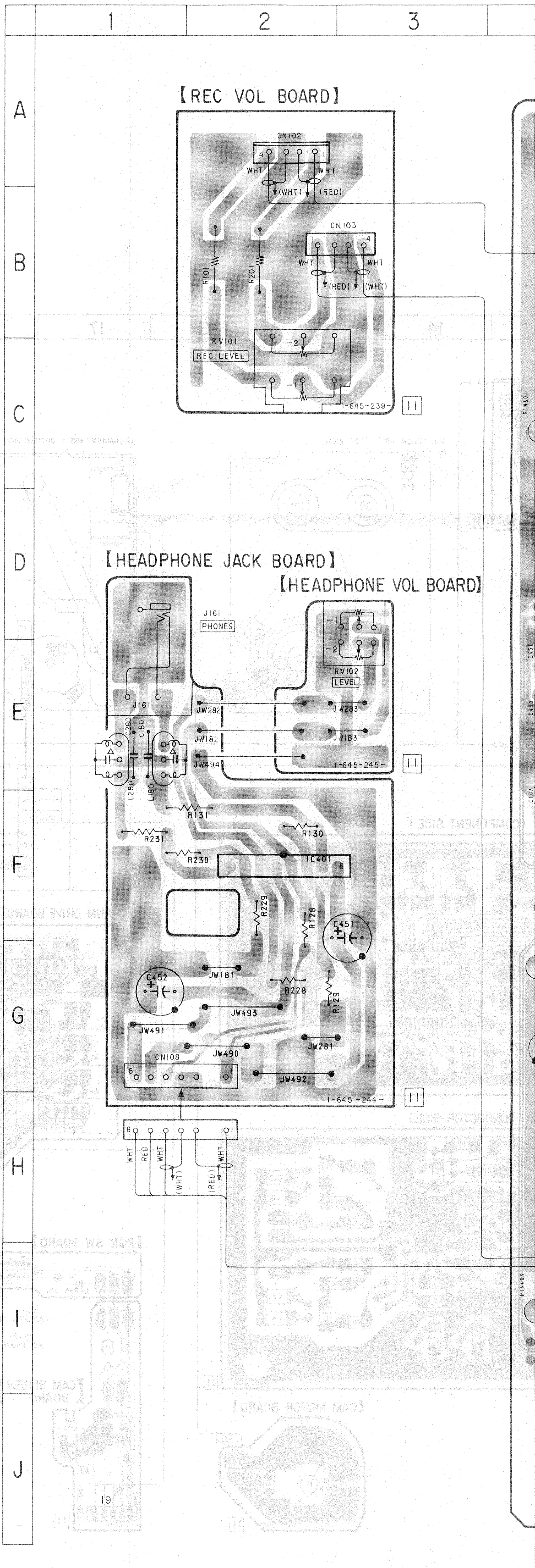

6
7
8
9
10
11
12
13
14
15
RESCENT INDICATOR TUBE
4G
3G
2G
1G
DIGITAL IN
OPTICAL
COAXIAL
AM 32kHz
44.1kHz
PM 48kHz
REPEAT 1
ALL
STEP
PGM NO.
RMS AMS
DISPLAY
OFF AUTO
MUSIC SCAN
SKIP PLAY
COPY ONCE
PROHIBIT
START ID
SKIP ID
CAUTION
START ID
SHIFT AUTO
RENUMBER
WRITE ERASE
SKIP ID
WRITE ERASE
6 4 2 0 OVER
END
REHEARSAL
dB
MARGIN
8G
END ID
WRITE ERASE
(5G, 6G)
(3G)
CP701-704
S701
TIMER
PLAY ← OFF → REC
【TIMER SW BOARD】
S701
(OPEN/CLOSE)
1-645-243-
11
【BATTERY BOARD】
WHT
CN399
RED WHT BLU
CN381
BAT301
RED WHT BLU
CN371
1-645-242-
11
US, Canadian MODEL
MECHANISM ASS'Y TOP VIEW
S01
FL701 FLUORESCENT INDICATOR TUBE
CN752
XTEST DISP
IC701
IC702
IC703
US, Canadian MODEL
AEP, E MODEL
MUSIC SCAN
FADER
END ID
SKIP ID
START ID
AUTO
RENUM
CLOCK SET
PRESENT
RECORDED
CLEAR
ERASE
DATE
1-645-238-
11
【RF AMP BOARD】 (COMPONENT SIDE)
CN51
RV1
RV2
IC1
(BLU)
(ORG)
1-639-300-
【RF AMP BOARD】 (CONDUCTOR SIDE)
1-639-300-
LAY BOARD】
WHT
11
【POWER BOARD】
F901
CN933
IC902
1-645-236-
11
12
13
11
14
〈12, 13〉
〈11-13〉
〈11-14〉
〈4〉
〈5, 6〉
【CAM MOTOR BOARD】
M904
CAM MOTOR
1-639-303-
11


14
15
16
17
18
19
20
21
22
23
MECHANISM ASS'Y TOP VIEW
S01
RED
YEL
WHT
(WHT)
MECHANISM ASS'Y BOTTOM VIEW
PM903
PM902
DRUM ASS'Y
CAPSTAN MOTOR ASS'Y M902
【MOTOR BOARD】
M931 CASSETTE COMPARTMENT MOTOR
C01
CN1
CN2
1-641-486-
11
【SW BOARD】
S1
S2
CASSETTE TABLE IN
CASSETTE TABLE OUT
CN13
1-641-487-
11
WHT
CN399
-645-242-
11
(See page 38)
4-6
7-10
11-14
TO MAIN SECTION (MAIN BOARD)
】(COMPONENT SIDE)
RV1
RV2
IC1
1-639-300-
11
】(CONDUCTOR SIDE)
1-639-300-
11
【DRUM DRIVE BOARD】
CN07
CN10
CN04
CN03
CN08
CN05
CN01
CN09
CN02
CN06
IC01
IC02
IC03
Q01
Q02
PH01 (TAKE-UP REEL)
PH02 (SUPPLY REEL)
1-639-302-
12
【TOP END SENSOR BOARD】
PH04
(SUPPLY)
CN15
D01
PH03
(TAKE UP)
1-639-305-
11
【RGN SW BOARD】
S01
1-639-301-
11
S01-1 CASSETTE IN
S01-2 REC PROOF
【CAM SLIDER BOARD】
SW2 FWD DET
SW1 STOP DET
CN16
1-639-306-
11
【CAM MOTOR BOARD】
M904 CAM MOTOR
CN11
1-639-303-
11
【REEL MOTOR BOARD】
M905 REEL MOTOR
CN14
1-639-304-
11

4-7. PRINTED WIRING BOARDS

– MAIN SECTION –

- See page 18 for circuit boards location and 25 for semiconductor lead layouts.


1
2
3
A
B
C
D
E
F
G
H
I
J
【REC VOL BOARD】
CN102
4
1
WHT
WHT
(WHT)
(RED)
CN103
1
4
WHT
WHT
(RED)
(WHT)
R101
R201
RV101
REC LEVEL
-2
-1
1-645-239-
11
【HEADPHONE JACK BOARD】
【HEADPHONE VOL BOARD】
J161
PHONES
-1
-2
RV102
LEVEL
J161
JW282
JW283
C280
C180
JW182
JW183
JW494
1-645-245-
11
L280
L180
R131
R130
R231
R230
IC401
1
8
R229
R128
C451
C452
JW181
R228
R129
JW493
JW491
JW281
CN108
JW490
6
1
JW492
1-645-244-
11
6
1
WHT
RED
WHT
(WHT)
(RED)
WHT
19

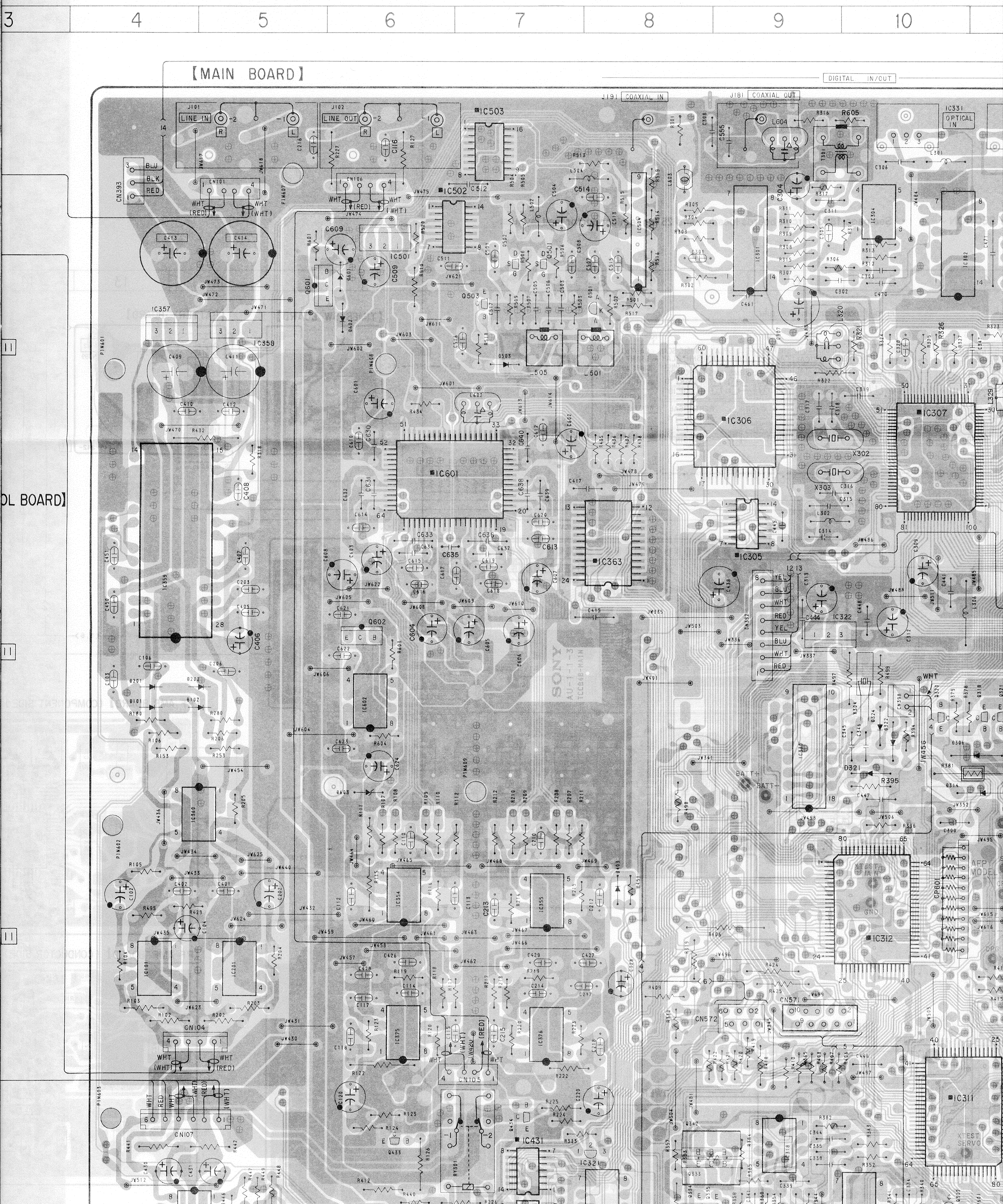
● SEMICONDUCTOR LOCATION

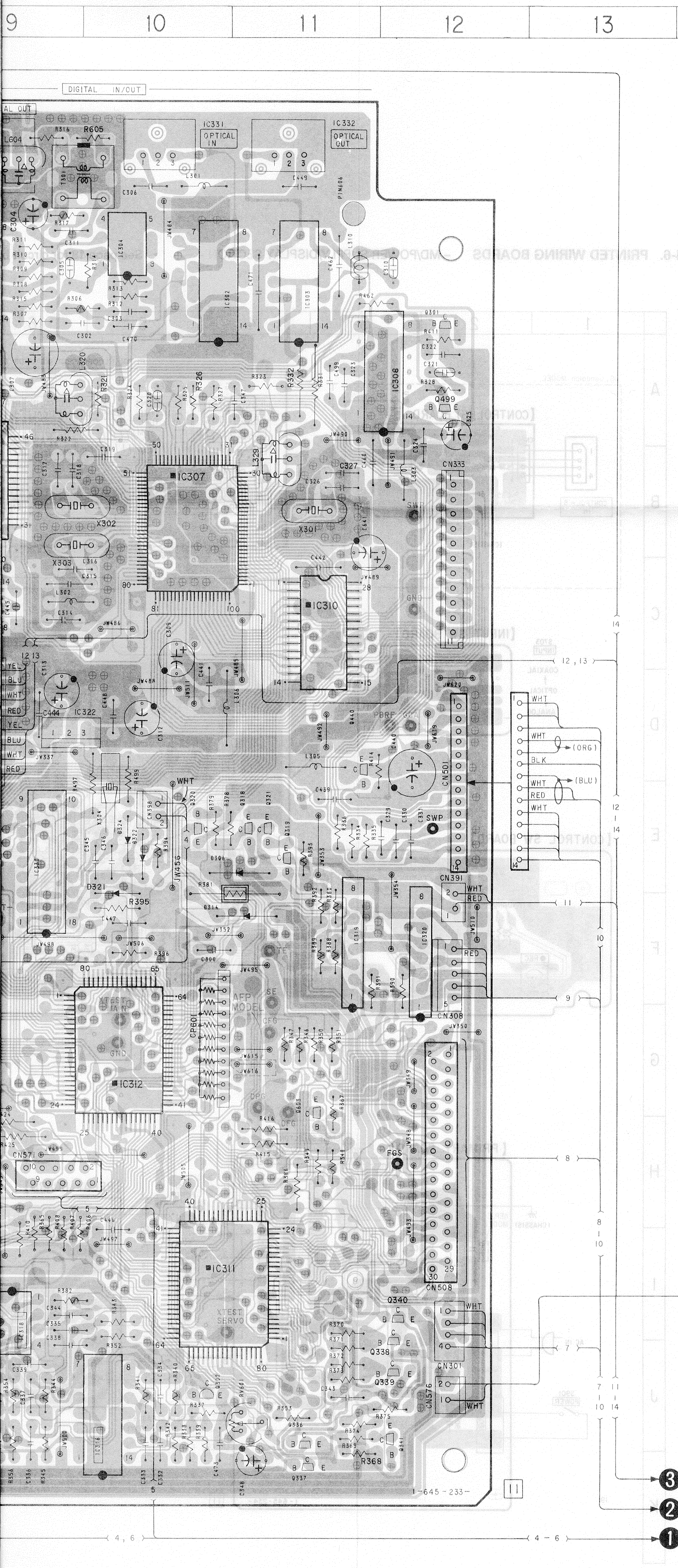
Ref. No.	Location	Ref. No.	Location
D101	F-4	IC360	G-5
D102	F-5	IC363	E-8
D201	F-4	IC375	H-6
D202	F-5	IC376	H-7
D306	F-11	IC401	F-2
D307	J-5	IC431	I-7
D308	J-7	IC432	J-7
D314	F-10	IC501	B-6
D321	F-10	IC502	B-7
D322	F-10	IC503	A-7
D324	F-10	IC504	B-8
D350	J-7	IC601	D-6
D403	G-8	IC602	F-6
D501	C-8		
D503	C-7	Q301	B-12
		Q302	J-10
D601	B-6	Q311	J-7
D602	C-6	Q312	J-5
D603	F-6	Q313	J-5
D701	I-14		
D702	H-14	Q318	F-11
		Q319	F-11
IC101	H-4	Q320	F-10
IC201	H-5	Q321	F-11
IC301	B-9	Q333	I-8
IC302	B-10		
IC303	B-11	Q334	J-8
		Q335	J-9
IC304	B-10	Q336	J-11
IC305	D-9	Q337	J-11
IC306	D-9	Q338	I-12
IC307	D-10		
IC308	C-12	Q339	J-12
		Q340	I-12
IC309	J-7	Q341	J-12
IC310	E-11	Q342	I-8
IC311	I-11	Q432	J-6
IC312	G-10		
IC316	J-10	Q433	I-6
		Q434	I-7
IC318	I-9	Q435	J-6
IC319	G-11	Q436	J-6
IC320	G-12	Q437	J-6
IC321	I-8		
IC322	E-9	Q438	J-6
		Q439	J-6
IC330	F-9	Q440	E-11
IC331	A-10	Q499	B-12
IC332	A-11	Q501	B-7
IC333	J-8		
IC354	G-6	Q502	B-7
		Q503	C-7
IC355	G-7	Q601	B-6
IC356	J-5	Q602	E-6
IC357	C-4	Q603	H-11
IC358	C-5		
IC359	E-4		

Notes on printed wiring board:

- ○——— : Indicated a lead wire mounted on the component side
- ■ : Parts mounted on the conductor side
- ⌐┐ : Indicates side identified with part number
- ⊕ : Through hole
- ▨ : Pattern from the side which enables seeing
- ░ : Pattern of the rear side

【MAIN BOARD】


3
4
5
6
7
8
9
10
DIGITAL IN/OUT
J191 COAXIAL IN
J181 COAXIAL OUT
IC331 OPTICAL IN
J101 LINE IN
J102 LINE OUT
R
L
CN393
BLU
BLK
RED
CN101
CN106
WHT (RED)
(WHT)
IC503
IC502
IC501
IC357
IC358
IC359
IC601
IC602
IC306
IC307
IC363
IC305
IC322
IC301
IC302
IC304
IC360
IC101
IC201
IC354
IC355
IC375
IC376
IC312
IC311
IC431
IC321
IC309
IC333
IC356
CN104
CN105
CN107
CN392
CN571
CN572
CP601
RY301
X302
X303
L501
L505
L604
YEL
BLU
WHT
RED
BATT+
BATT-
SONY
AU-1-1-3
TCCB48-MAIN
OL BOARD】


9
10
11
12
13
14
DIGITAL IN/OUT
IC331 OPTICAL IN
IC332 OPTICAL OUT
IC307
IC310
IC308
IC312
IC311
X301
X302
X303
CN333
CN501
CN391
CN308
CN508
CN301
CN576
CN571
CP601
AFP MODEL
XTEST MAIN
XTEST SERVO
SWP
FGS
WHT
RED
BLK
(ORG)
(BLU)
12, 13
12 - 14
11
10
9
8
8 - 10
7
7 - 10
11 - 14
4, 6
4 - 6
1-645-233-
11

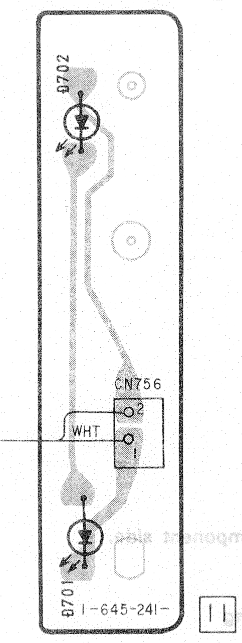
❸ TO POWER BOARD

❷ TO MD, CASSE-COM, DRUM DRIVE, RF AMP BOARD

❶ TO CONTROL SW/BATTERY BOARD

(See page 34)
TO MD/
POWER SUPPLY/
DISPLAY SECTION

【LED BOARD】


D702
D701
CN756
WHT
2
1
1-645-241-
11

4-8. SCHEMATIC DIAGRAM – MAIN SECTION –

• See page 22 for waveforms, 43 for IC block diagrams an

Notes on schematic diagram:

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in ohms, 1/4W or less unless otherwise noted.
- △ : Internal component
- % : Indicate a permissible margin
- ▭ : Nonflammable resistor

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

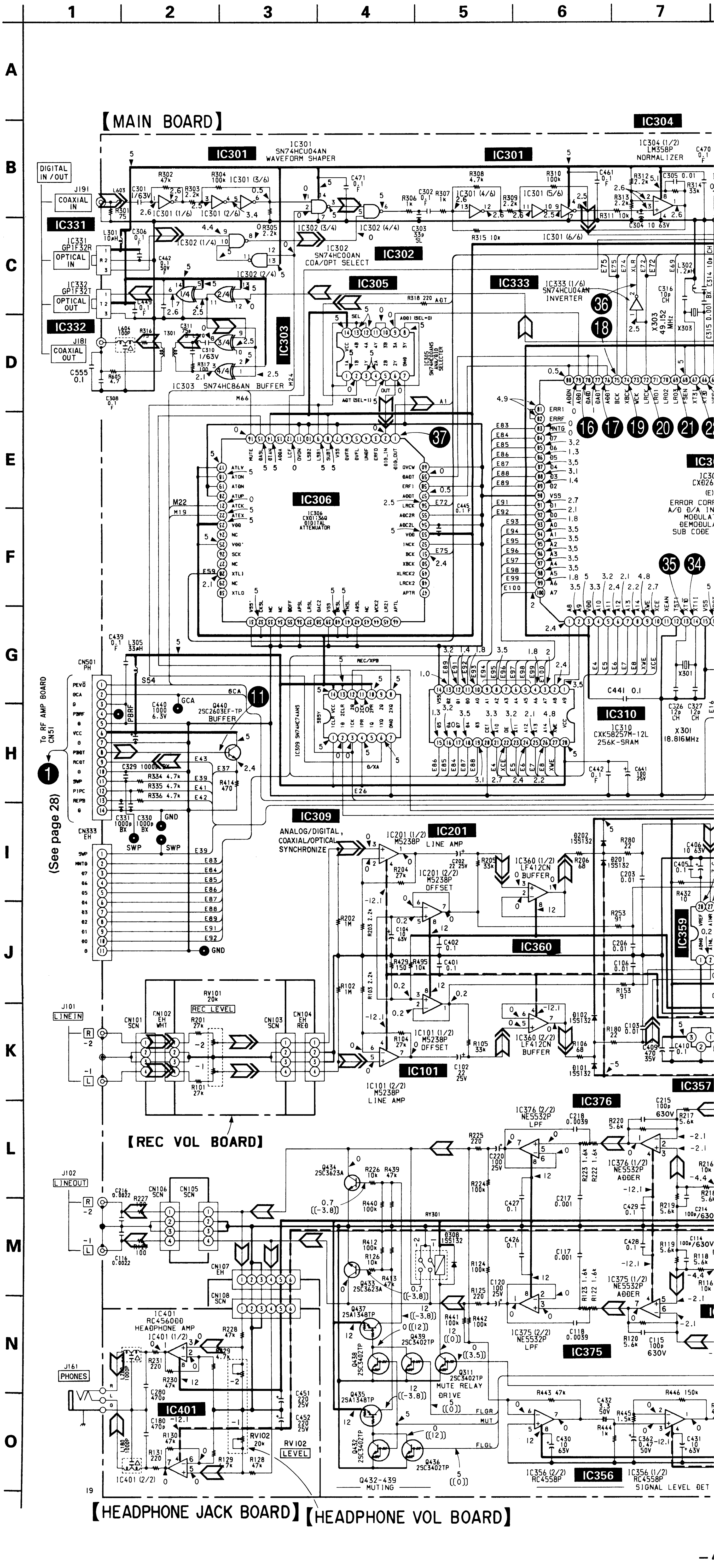
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une piéce portant le numéro spécifié.

- ━━━ : B + Line
- ▪▪▪▪ : B – Line
- ☐ : Adjustment for repair
- Voltage are dc with respect to ground under no-signal (STOP) conditions.

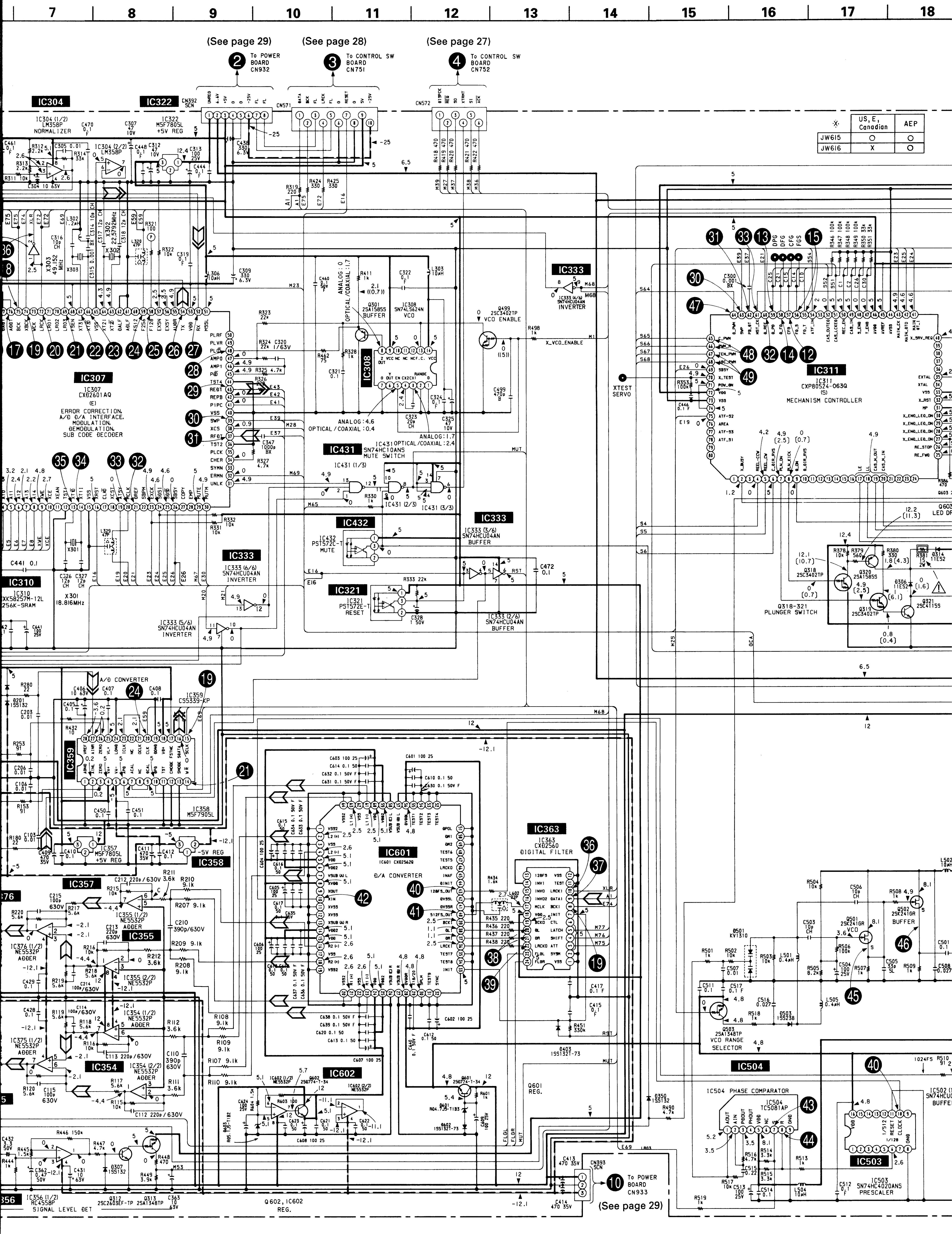
No mark : Stop
( ) : PLAY
(( )) : REC
< > : FF
<< >> : REW
[ ] : MOMENTARILY WHEN ▶▶, ◀◀ and ▶ BUTTON IS PRESSED.
[[ ]] : MUTING

- Voltages are taken with a VOM (input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Signal path

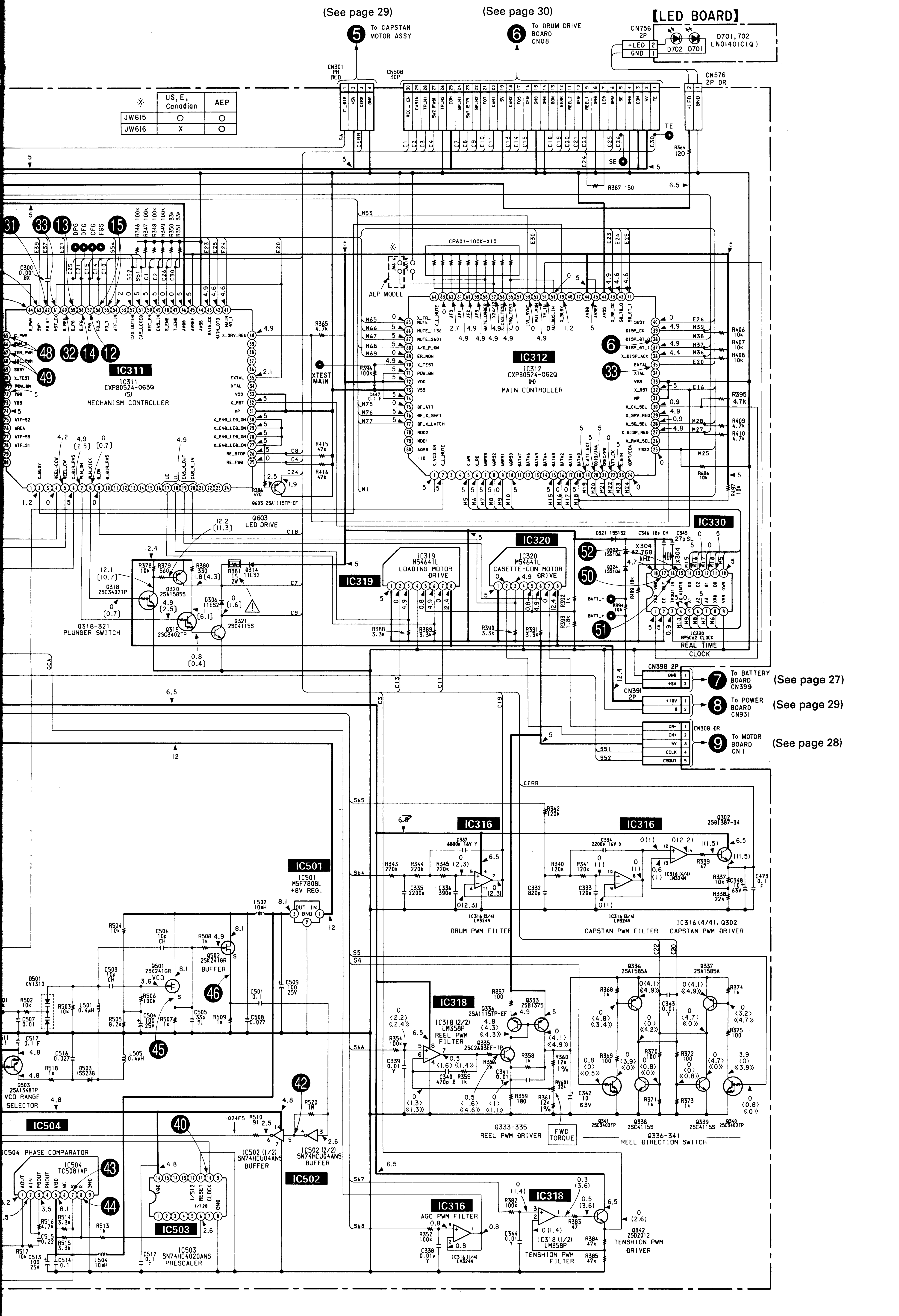
〉 : PB
〉〉 : REC


1
2
3
4
5
6
7
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
[MAIN BOARD]
DIGITAL IN / OUT
J191 COAXIAL IN
IC331 GP1F32R OPTICAL IN
IC332 GP1F32T OPTICAL OUT
J181 COAXIAL OUT
IC301 SN74HCU04AN WAVEFORM SHAPER
IC302 SN74HC00AN COA/OPT SELECT
IC303 SN74HC86AN BUFFER
IC304 (1/2) LM358P NORMALIZER
IC305 SN74HC157AN ANALOG/DIGITAL SELECTER
IC306 CXD1160 DIGITAL ATTENUATOR
IC333 (1/6) SN74HCU04AN INVERTER
X303 49.152 MHz
ERROR CORR A/D D/A IN MODULA DEMODULA SUB CODE
IC310 CXK58257M-12L 256K-SRAM
X301 18.816MHz
CN501 PH
To RF AMP BOARD CN51
(See page 28)
Q440 2SC2603EF-TP BUFFER
CN333 EH
IC309 SN74HC74ANS
IC309 ANALOG/DIGITAL, COAXIAL/OPTICAL SYNCHRONIZE
IC201 (1/2) M5238P LINE AMP
IC201 (2/2) M5238P OFFSET
IC360 (1/2) LF412CN BUFFER
IC360 (2/2) LF412CN BUFFER
IC101 (1/2) M5238P OFFSET
IC101 (2/2) M5238P LINE AMP
IC359
IC357
J101 LINE IN
CN101 SCN
CN102 EH WHT
RV101 20k REC LEVEL
CN103 SCN
CN104 EH RED
[REC VOL BOARD]
J102 LINE OUT
CN106 SCN
CN105 SCN
CN107 EH
CN108 SCN
IC376 (2/2) NE5532P LPF
IC376 (1/2) NE5532P ADDER
IC375 (1/2) NE5532P ADDER
IC375 (2/2) NE5532P LPF
RY301
Q434 2SC3623A
Q433 2SC3623A
Q437 2SA1348TP
Q438 2SC3402TP
Q439 2SC3402TP
Q311 MUTE RELAY DRIVE
Q435 2SA1348TP
Q432 2SC3402TP
Q436 2SC3402TP
Q432-439 MUTING
IC401 RC4560DD HEADPHONE AMP
J161 PHONES
RV102 20k LEVEL
IC356 (2/2) RC4558P
IC356 (1/2) RC4558P SIGNAL LEVEL DET
[HEADPHONE JACK BOARD]
[HEADPHONE VOL BOARD]

block diagrams and 46 for pin functions.


7
8
9
10
11
12
13
14
15
16
17
18
(See page 29)
To POWER BOARD CN932
(See page 28)
To CONTROL SW BOARD CN751
(See page 27)
To CONTROL SW BOARD CN752
IC304
IC304 (1/2) LM358P NORMALIZER
IC322
IC322 M5F7805L +5V REG
IC304 (2/2) LM358P
X303 49.152 MHz
X302 22.5792MHz
IC307
IC307 CXD2601AQ (E)
ERROR CORRECTION, A/D D/A INTERFACE, MODULATION, DEMODULATION, SUB CODE DECODER
IC310
IC310 CXK58257M-12L 256K-SRAM
X301 18.816MHz
IC333
IC333 (4/6) SN74HCU04AN INVERTER
IC333 (6/6) SN74HCU04AN INVERTER
IC333 (5/6) SN74HCU04AN INVERTER
IC333 (3/6) SN74HCU04AN BUFFER
IC333 (2/6) SN74HCU04AN BUFFER
Q301 2SA1585S BUFFER
IC308
IC308 SN74LS624N VCO
Q499 2SC3402TP VCO ENABLE
X_VCO_ENABLE
XTEST SERVO
ANALOG : 0 OPTICAL/COAXIAL : 1.7
ANALOG : 4.6 OPTICAL/COAXIAL : 0.4
ANALOG : 1.7 OPTICAL/COAXIAL : 2.4
IC431
IC431 SN74HC10ANS MUTE SWITCH
IC431 (1/3)
IC431 (2/3)
IC431 (3/3)
IC432
IC432 PST572C-T MUTE
IC321
IC321 PST572E-T RESET
IC311
IC311 CXP80524-063Q (S) MECHANISM CONTROLLER
Q318-321 PLUNGER SWITCH
Q318 2SC3402TP
Q319 2SC3402TP
Q320 2SA1585S
Q321 2SC4115S
LED DR
A/D CONVERTER
IC359
IC359 CS5339-KP
IC358
IC358 M5F7905L
IC357
IC357 M5F7805L +5V REG
-5V REG
IC601
IC601 CXD2562Q
D/A CONVERTER
IC363
IC363 CXD2560 DIGITAL FILTER
IC602
IC602 (1/2) NE5532P
IC602 (2/2) NE5532P
Q602 2SD774-T-34
Q601 2SD774-T-34
Q601 REG.
Q602, IC602 REG.
IC355
IC355 (1/2) NE5532P ADDER
IC355 (2/2) NE5532P
IC354
IC354 (1/2) NE5532P ADDER
IC354 (2/2) NE5532P ADDER
IC376 (1/2) NE5532P ADDER
IC375 (1/2) NE5532P ADDER
IC356 (1/2) RC4558P SIGNAL LEVEL DET
Q312 2SC2603EF-TP
Q313 2SA1348TP
To POWER BOARD CN933
(See page 29)
Q501 2SK241GR VCO
Q502 2SK241GR BUFFER
Q503 2SA1348TP VCO RANGE SELECTOR
IC504
IC504 PHASE COMPARATOR
IC504 TC5081AP
IC503
IC503 SN74HC4020ANS PRESCALER
IC502 SN74HCU BUFFE
CN392 SCN
CN571
CN572
CN393 SCN

※	US, E, Canadian	AEP
JW615	○	○
JW616	X	○

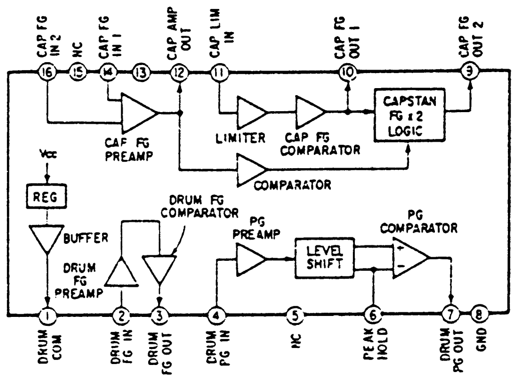

(See page 29)
5 To CAPSTAN MOTOR ASSY
(See page 30)
6 To DRUM DRIVE BOARD CN08
【LED BOARD】
CN756 2P
D701,702 LN01401C(Q)
CN301 PH RED
CN508 30P
CN576 2P DR
※
US, E, Canadian
AEP
JW615
JW616
AEP MODEL
CP601-100K-X10
IC311
IC311 CXP80524-063Q (S) MECHANISM CONTROLLER
IC312
IC312 CXP80524-062Q (M) MAIN CONTROLLER
XTEST MAIN
Q603 LED DRIVE
Q603 2SA1115TP-EF
Q318-321 PLUNGER SWITCH
Q318 2SC3402TP
Q320 2SA1585S
Q319 2SC3402TP
Q321 2SC4115S
IC319
IC319 M54641L LOADING MOTOR DRIVE
IC320
IC320 M54641L CASETTE-CON MOTOR DRIVE
IC330
X304 32.768 kHz
IC330 RP5C62 CLOCK
REAL TIME CLOCK
BATT_-
BATT_+
CN398 2P
7 To BATTERY BOARD CN399 (See page 27)
CN391 2P
8 To POWER BOARD CN931 (See page 29)
CN308 8R
9 To MOTOR BOARD CN1 (See page 28)
IC316
IC316 (2/4) LM324N DRUM PWM FILTER
IC316
IC316 (3/4) LM324N CAPSTAN PWM FILTER
IC316 (4/4), Q302 CAPSTAN PWM DRIVER
Q302 2SD1387-34
IC501
IC501 M5F7808L +8V REG.
Q501 2SK241GR VCO
Q502 2SK241GR BUFFER
Q503 2SA1348TP VCO RANGE SELECTOR
D501 KV1310
IC504
IC504 PHASE COMPARATOR
IC504 TC5081AP
IC503
IC503 SN74HC4020ANS PRESCALER
IC502 (1/2) SN74HCU04ANS BUFFER
IC502 (2/2) SN74HCU04ANS BUFFER
IC502
IC318
IC318 (2/2) LM358P REEL PWM FILTER
Q333-335 REEL PWM DRIVER
Q333 2SB1375
Q334 2SA1115TP-EF
Q335 2SC2603EF-TP
FWD TORQUE
Q336-341 REEL DIRECTION SWITCH
Q336 2SA1585A
Q337 2SA1585A
IC316
IC316 (1/4) LM324N AGC PWM FILTER
IC318
IC318 (1/2) LM358P TENSHION PWM FILTER
Q342 2SD2012 TENSHION PWM DRIVER

※	US, E, Canadian	AEP
JW615	○	○
JW616	X	○

4-9. IC BLOCK DIAGRAMS

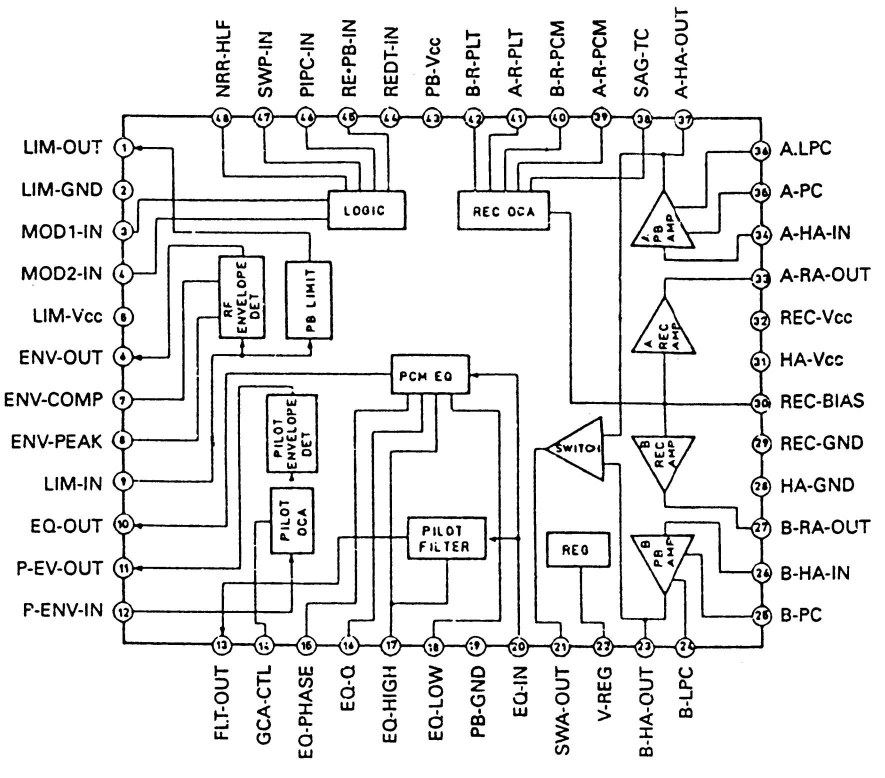
- **DRUM DRIVE board**

IC01 CX20115A


CAP FG IN 2
NC
CAP FG IN 1
CAP AMP OUT
CAP LIM IN
CAP FG OUT 1
CAP FG OUT 2
CAPSTAN FG x 2 LOGIC
CAF FG PREAMP
LIMITER
CAP FG COMPARATOR
COMPARATOR
Vcc
REG
BUFFER
DRUM FG PREAMP
DRUM FG COMPARATOR
PG PREAMP
LEVEL SHIFT
PG COMPARATOR
16 15 14 13 12 11 10 9
1 2 3 4 5 6 7 8
DRUM COM
DRUM FG IN
DRUM FG OUT
DRUM PG IN
NC
PEAK HOLD
DRUM PG OUT
GND

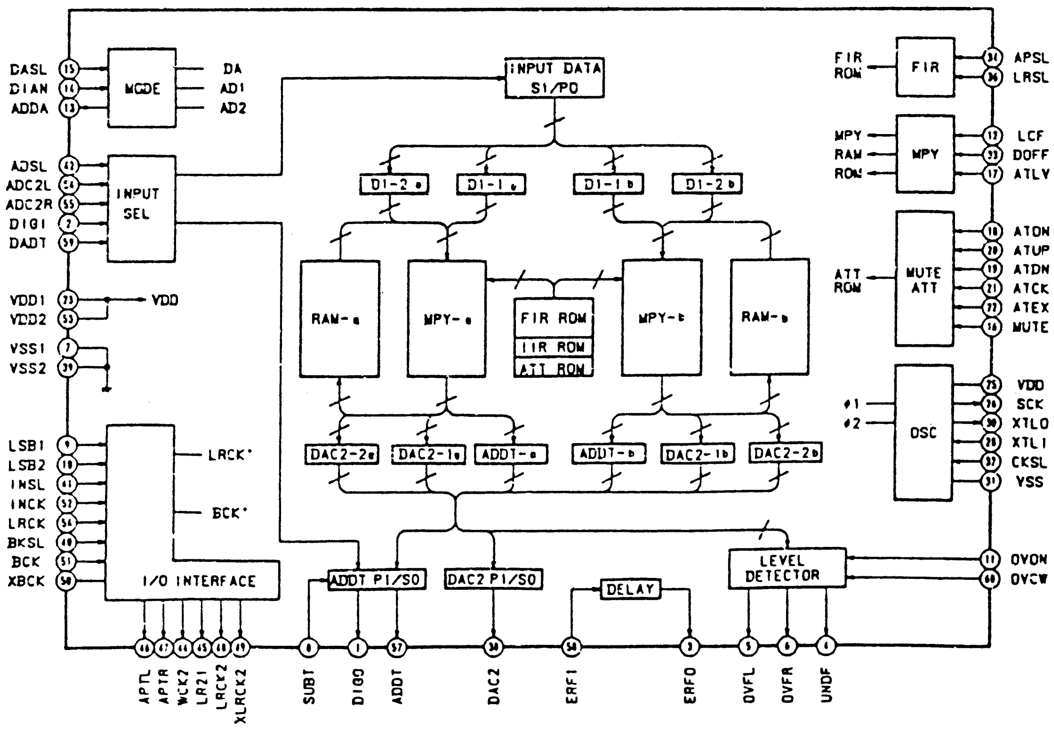
- **RF AMP board**

IC1 CXA1364R

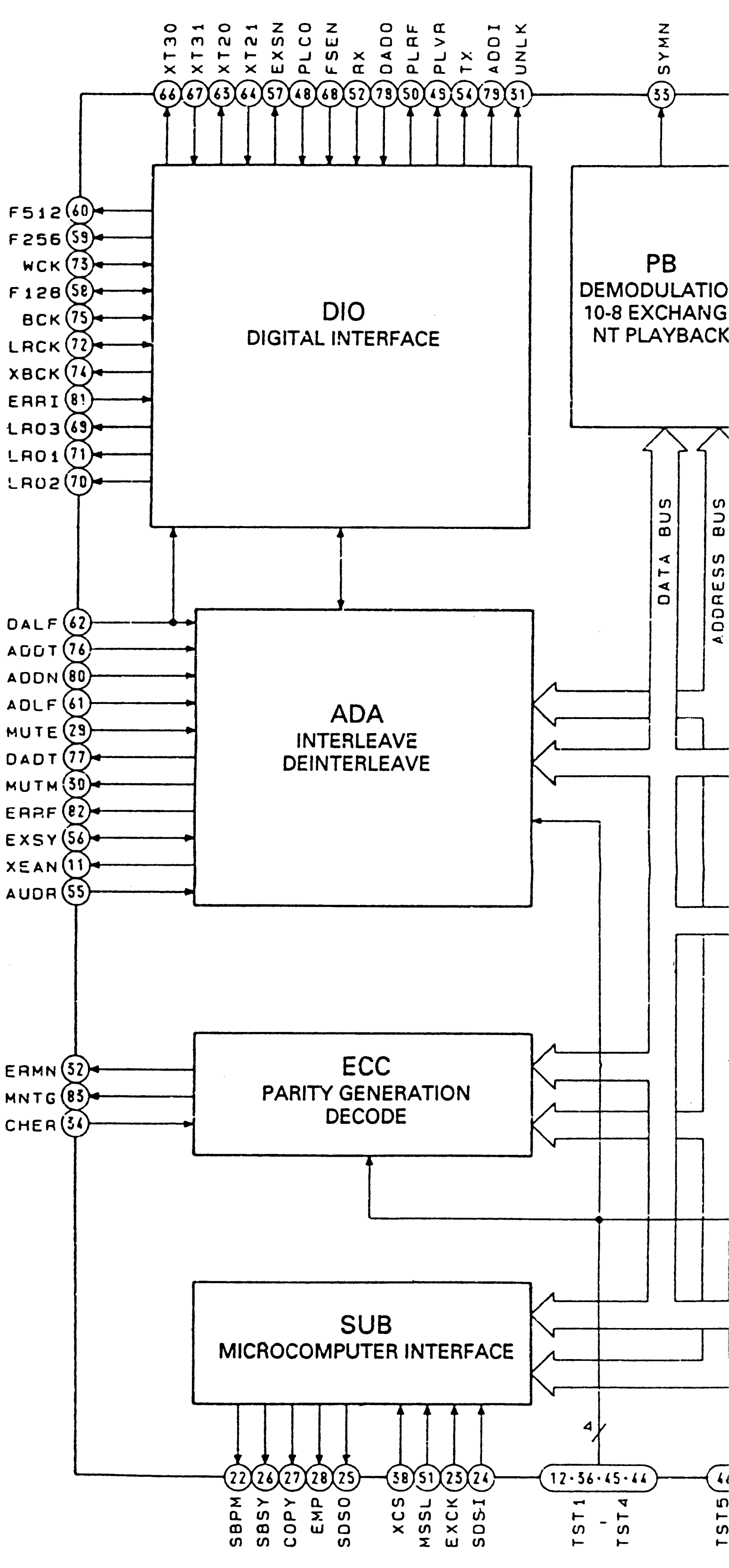

NRR-HLF
SWP-IN
PIPC-IN
RE-PB-IN
REDT-IN
PB-Vcc
B-R-PLT
A-R-PLT
B-R-PCM
A-R-PCM
SAG-TC
A-HA-OUT
LIM-OUT
LIM-GND
MOD1-IN
MOD2-IN
LIM-Vcc
ENV-OUT
ENV-COMP
ENV-PEAK
LIM-IN
EQ-OUT
P-EV-OUT
P-ENV-IN
LOGIC
REC OCA
RF ENVELOPE DET
PB LIMIT
PCM EQ
PILOT ENVELOPE DET
PILOT OCA
PILOT FILTER
SWITCH
REG
A PB AMP
A REC AMP
B REC AMP
B PB AMP
A.LPC
A-PC
A-HA-IN
A-RA-OUT
REC-Vcc
HA-Vcc
REC-BIAS
REC-GND
HA-GND
B-RA-OUT
B-HA-IN
B-PC
FLT-OUT
GCA-CTL
EQ-PHASE
EQ-Q
EQ-HIGH
EQ-LOW
PB-GND
EQ-IN
SWA-OUT
V-REG
B-HA-OUT
B-LPC

- **MAIN board**

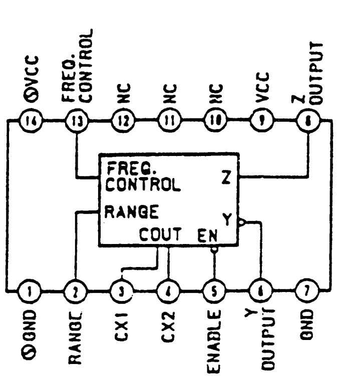
IC306 CXD1136Q


DASL
DIAN
ADDA
MODE
DA
AD1
AD2
ADSL
ADC2L
ADC2R
DIGI
DADT
INPUT SEL
VDD1
VDD2
VDD
VSS1
VSS2
LSB1
LSB2
INSL
INCK
LRCK
BKSL
BCK
XBCK
LRCK*
BCK*
I/O INTERFACE
INPUT DATA S1/PO
D1-2 a
D1-1 a
D1-1 b
D1-2 b
RAM-a
MPY-a
FIR ROM
IIR ROM
ATT ROM
MPY-b
RAM-b
DAC2-2a
DAC2-1a
ADDT-a
ADDT-b
DAC2-1b
DAC2-2b
ADDT P1/SO
DAC2 P1/SO
DELAY
LEVEL DETECTOR
FIR ROM
FIR
APSL
LRSL
MPY
RAM
ROM
LCF
DOFF
ATLV
ATT ROM
MUTE ATT
ATON
ATUP
ATDN
ATCK
ATEX
MUTE
ϕ1
ϕ2
OSC
VDD
SCK
XTLO
XTLI
CKSL
VSS
OVON
OVCW
APTL
APTR
WCK2
LR21
LRCK2
XLRCK2
SUBT
DIGO
ADDT
DAC2
ERFI
ERFO
OVFL
OVFR
UNDF

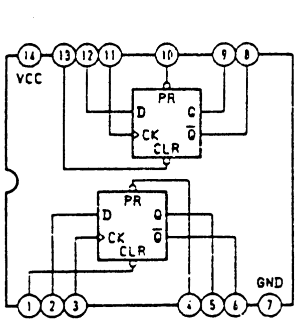
IC307 CXD2601AQ


XT30
XT31
XT20
XT21
EXSN
PLCO
FSEN
RX
DADO
PLRF
PLVR
TX
ADDI
UNLK
SYMN
F512
F256
WCK
F128
BCK
LRCK
XBCK
ERRI
LR03
LR01
LR02
DIO
DIGITAL INTERFACE
PB
DEMODULATIO
10-8 EXCHANG
NT PLAYBACK
DATA BUS
ADDRESS BUS
DALF
ADDT
ADDN
ADLF
MUTE
DADT
MUTM
ERRF
EXSY
XEAN
AUDR
ADA
INTERLEAVE
DEINTERLEAVE
ERMN
MNTG
CHER
ECC
PARITY GENERATION
DECODE
SUB
MICROCOMPUTER INTERFACE
SBPM
SBSY
COPY
EMP
SDSO
XCS
MSSL
EXCK
SDSI
12·36·45·44
TST1
TST4
TST5

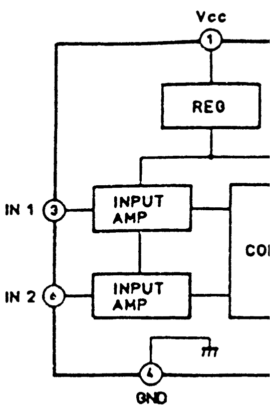
IC308 SN74LS624N

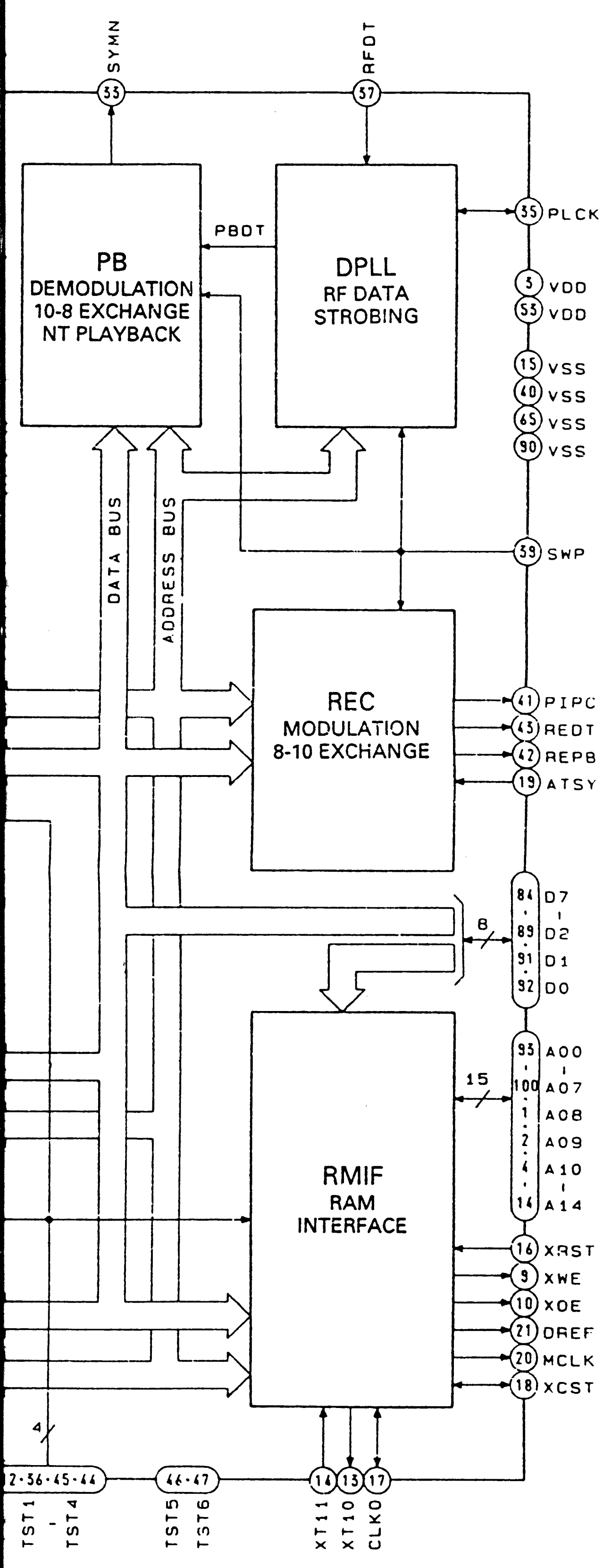

ϕVCC
FREQ. CONTROL
NC
NC
NC
VCC
Z OUTPUT
FREQ. CONTROL
RANGE
COUT
EN
Z
Y
ϕGND
RANGE
CX1
CX2
ENABLE
Y OUTPUT
GND

IC309 SN74HC74ANS

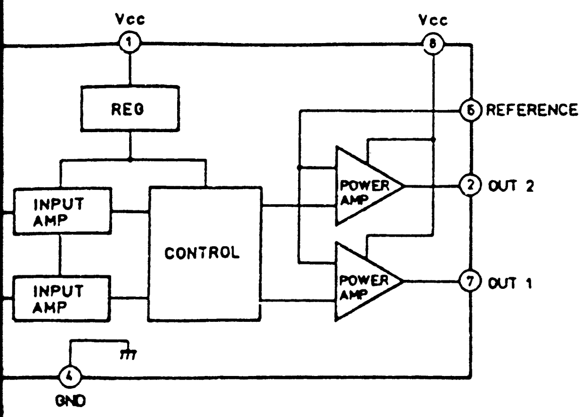

VCC
PR
D
CK
CLR
Q
Q̄
GND

IC319,320 M54641L

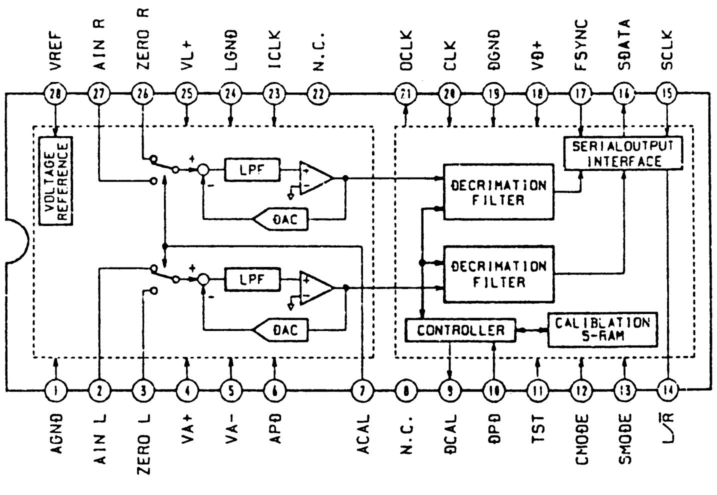

Vcc
REG
IN 1
INPUT AMP
IN 2
INPUT AMP
CO
GND


SYMN
RFDT
55
57
PB
DEMODULATION
10-8 EXCHANGE
NT PLAYBACK
PBDT
DPLL
RF DATA
STROBING
35 PLCK
5 VDD
55 VDD
15 VSS
40 VSS
65 VSS
90 VSS
DATA BUS
ADDRESS BUS
39 SWP
REC
MODULATION
8-10 EXCHANGE
41 PIPC
43 REDT
42 REPB
19 ATSY
8
84 D7
89 D2
91 D1
92 D0
15
95 A00
100 A07
1 A08
2 A09
4 A10
14 A14
RMIF
RAM
INTERFACE
16 XRST
9 XWE
10 XOE
21 DREF
20 MCLK
18 XCST
4
2·36·45·44
46·47
14
13
17
TST1 - TST4
TST5
TST6
XTII
XTIO
CLKO

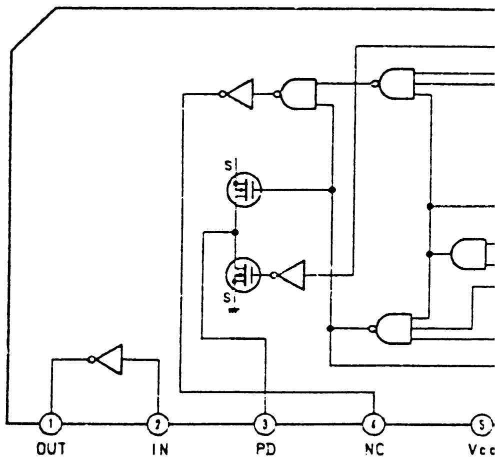
9,320 M54641L


Vcc
Vcc
1
8
REG
6 REFERENCE
INPUT AMP
INPUT AMP
CONTROL
POWER AMP
POWER AMP
2 OUT 2
7 OUT 1
4
GND

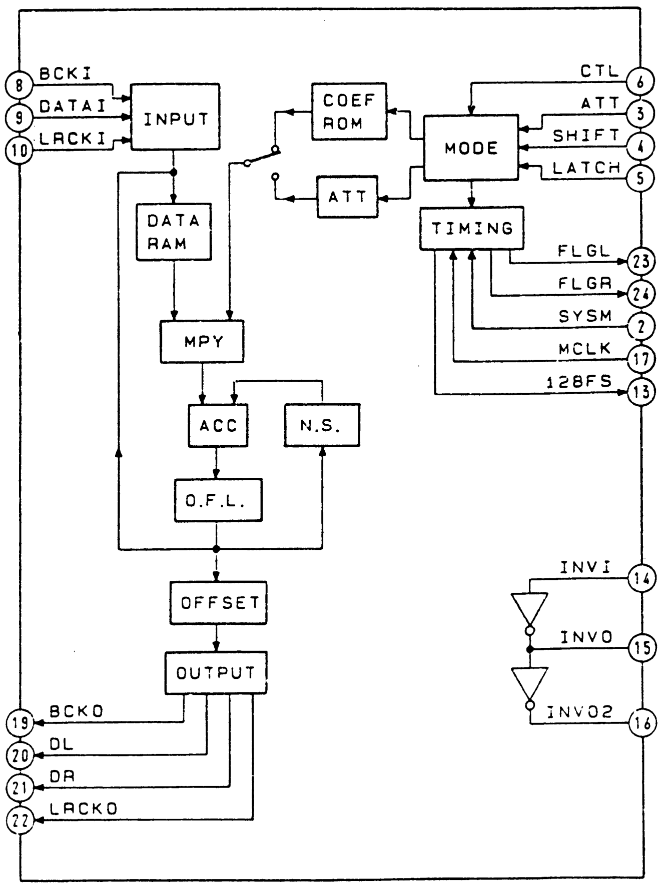
IC359 CS5339-KP


VREF 28
AIN R 27
ZERO R 26
VL+ 25
LGND 24
ICLK 23
N.C. 22
DCLK 21
CLK 20
DGND 19
VD+ 18
FSYNC 17
SDATA 16
SCLK 15
VOLTAGE REFFRENCE
LPF
DAC
LPF
DAC
SERIAL OUTPUT INTERFACE
DECRIMATION FILTER
DECRIMATION FILTER
CONTROLLER
CALIBLATION S-RAM
1 AGND
2 AIN L
3 ZERO L
4 VA+
5 VA-
6 APD
7 ACAL
8 N.C.
9 DCAL
10 DPD
11 TST
12 CMODE
13 SMODE
14 L/R̄

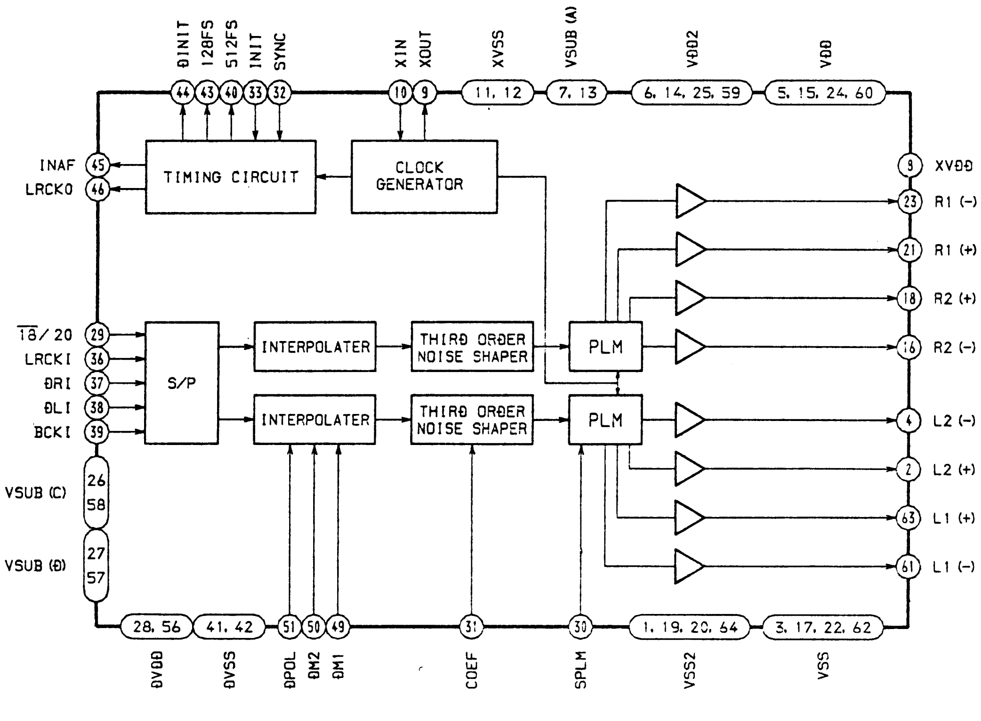
IC504 TC5081AP


S1
S2
1 OUT
2 IN
3 PD
4 NC
5 Vcc

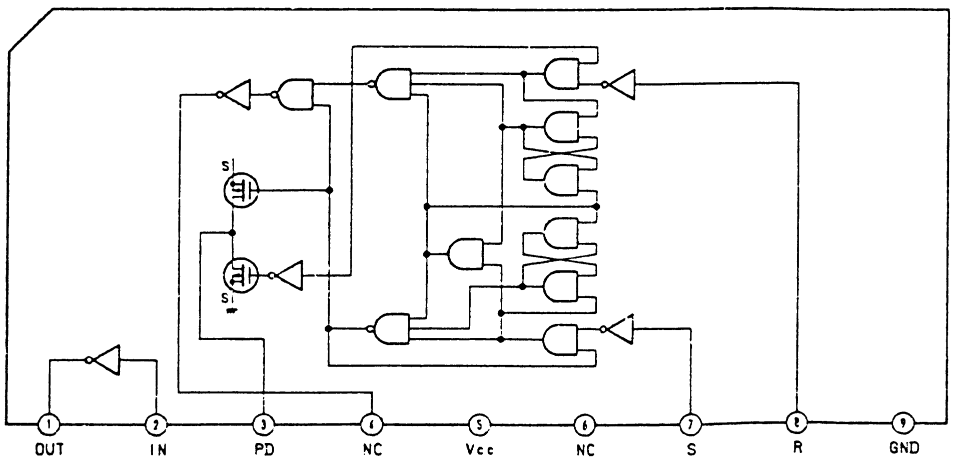
IC363 CXD2560M

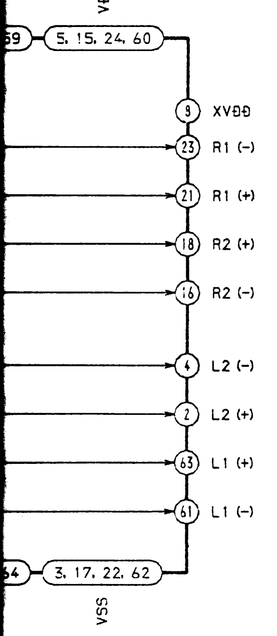

8 BCKI
9 DATAI
10 LRCKI
INPUT
COEF ROM
ATT
MODE
CTL 6
ATT 3
SHIFT 4
LATCH 5
DATA RAM
TIMING
FLGL 23
FLGR 24
SYSM 2
MCLK 17
128FS 13
MPY
ACC
N.S.
O.F.L.
OFFSET
OUTPUT
INVI 14
INVO 15
INVO2 16
19 BCKO
20 DL
21 DR
22 LRCKO

IC601 CXD2562Q


DINIT 44
128FS 43
512FS 40
INIT 33
SYNC 32
XIN 10
XOUT 9
XVSS 11, 12
VSUB (A) 7, 13
VDD2 6, 14, 25, 59
VDD 5, 15, 24, 60
INAF 45
LRCKO 46
TIMING CIRCUIT
CLOCK GENERATOR
8 XVDD
23 R1 (-)
21 R1 (+)
18 R2 (+)
16 R2 (-)
1̄8̄/20 29
LRCKI 36
DRI 37
DLI 38
BCKI 39
S/P
INTERPOLATER
INTERPOLATER
THIRD ORDER NOISE SHAPER
THIRD ORDER NOISE SHAPER
PLM
PLM
4 L2 (-)
2 L2 (+)
63 L1 (+)
61 L1 (-)
VSUB (C) 26 58
VSUB (D) 27 57
DVDD 28, 56
DVSS 41, 42
DPOL 51
DM2 50
DM1 49
COEF 31
SPLM 30
VSS2 1, 19, 20, 64
VSS 3, 17, 22, 62

IC504 TC5081AP





4-10. PIN FUNCTIONS

IC306 Digital Attenuator (CXD1136Q)

The captioned attenuator is used with the equipment as a digital attenuator in fade IN and fade OUT.

Pin No.	Pin Name	I/O	Description
1	DIGO	O	Serial data output synchronized with BCK (complement of 2)
2	DIGI	I	Serial data input synchronized with BCK (complement of 2)
3	ERFO	O	Signal output for discriminating whether or not DADT has interpolated data (Not in use)
4	UNDF	O	Detect result for ADDT L, R channel data of –54 dB or less (“L”: –54 dB or less) (Not in use)
5	OVFL	O	Detect result for ADDT L channel overflow (“L”: overflow detected) (Not in use)
6	OVFR	O	Detect result for ADDT R channel overflow (“L”: overflow detected) (Not in use)
7	VSS	—	GND
8	SUBT	I	Selects whether subcode or 18-bit data is output to ADDT and DIGO (“H” or open: 18-bit data output, “L”: subcode output)
9	LSB1	I	MSB/LSB fast switching for DADT, ADDT, DIGI, DIGO (“H” or open MSB fast, L: LSB fast)
10	LSB2	I	MSB/LSB fast switching for DAC2, ADC2L (ADC2R) (“H” or open MSB fast, L: LSB fast)
11	OVON	I	Overflow detect result on/off (“H” or open: OVFL, OVFR output valid, L: OVFL, OVFR fixed “H”)
12	LCF	I	Low-cut filter on/off (“H” or open: on)
13	ADDA	O	“H” in AD mode (DASL = DIAN = “L”) (Not in use)
14	DIAN	I	Sets AD and DA modes
15	DASL	I	Sets AD and DA modes
16	MUTE	I	Soft muting on/off (“H”: mute on)
17	ATLV	I	Digital volume range setting (“H” or open: 0 - –60, – ∞ dB, “L”: +12 - –48, ∞ dB
18	ATON	I	Digital volume on/off (“H” or open: off)
19	ATDN	I	Digital volume level down
20	ATUP	I	Digital volume level up
21	ATCK	I	Digital volume level setting clock and soft muting external clock
22	ATEX	I	Soft muting operation clock selection (“H” or open: internal clock, “L”: ATCK)
23	VDD	—	Power supply (+5 V)
24	NC		
25	VDD	—	Oscillator circuit power supply (+5 V)
26	SCK	O	Oscillator clock output (Not in use)
27	NC		
28	XTLI	I	Crystal connector and clock input pin
29	NC		
30	XTLO	O	Crystal connector pin (24.576 MHz oscillation frequency possible) (Not in use)
31	VSS	—	Oscillator circuit GND
32	CKSL	I	Oscillator clock division selection (“H” or open: no division, “L”: 1/2 division)
33	NC		
34	NC		
35	DOFF	I	DAC2 digital offset on/off (“H” or open: on) (Not in use)
36	APSL	I	Aperture correction filter coefficient selection (not valid in AD mode) (”H” or open: correction active)
37	LRSL	I	L, R channel phase difference correction selection (“H” or open: correction active) (Not in use)
38	DAC2	O	Serial data output to 2-times oversampling DA converter (complement of 2) (Not in use)
39	VSS	—	Power supply (+5 V)
40	BKSL	I	LRCK, BCK input timing switch (“H” or open: LRCK change point and BCK leading edge synchronized, “L”: LRCK change point and BCK trailing edge synchronized)
41	INSL	I	DADT, DIGI, ADC2L (ADC2R) data incorporation clock selection (“H” or open: BCK, “L”: INCK)
42	ADSL	I	ADC2L, ADC2R data selection (“H” or open: ADC2L, “L”: ADC2L and ADC2R switched by LRCK2)
43	NC		
44	WCK2	O	Clock equivalent to 4fs (Not in use)
45	LR21	O	DAC2 L, R channel discrimination signal in I^2S format (Not in use)

Pin No.	Pin Name	I/O	Description
46	APTL	O	Aperture signal (Not in use)
47	APTR	O	Aperture signal (Not in use)
48	LRCK2	O	DAC2, ADC2L (ADC2R) L, R channel discrimination signal (equivalent to 2fs) ("L": L channel, "H": R channel) (Not in use)
49	XLRCK2	O	LRCK2 inverted output (Not in use)
50	XBCK	O	BCK inverted output (Not in use)
51	BCK	I	Clock equivalent to 64fs for DADT, ADDT, DIGI, DIGO data incorporation
52	INCK	I	DADT, DIGI, ADC2L (ADC2R) data incorporation clock
53	VDD	—	Power supply (+5 V)
54	ADC2L	I	Serial data input from 2-times oversampling AD converter (complement of 2)
55	ADC2R	I	Serial data input from 2-times oversampling AD converter (complement of 2)
56	LRCK	I	DADT, ADDT, DIGI, DIGO L, R channel discrimination signal (fs) ("L": L channel, "H": R channel)
57	ADDT	O	Serial data output synchronized with BCK (complement of 2)
58	ERFI	I	Signal input for discriminating whether or not DADT has interpolated data (complement of 2)
59	DADT	I	Serial data input synchronized with BCK (complement of 2)
60	OVCW	I	Clock input which determines detect time for OVFL, OVFR and UNDF

IC307 DAT Signal Processor (CXD2601AQ)

This processor is an LSI to process recording and playback signals of the R-DAT system, in a single chip and provided with digital PLL, modem, error correction circuit, digital I/O, RAM control circuit, etc.

Pin No.	Pin Name	I/O	Description
1, 2	A08, A09	I/O	RAM address A08, A09
3	VDD	—	5 V
4-6	A10-A12	I/O	RAM address A10-A12
7, 8	A13, A14	O	RAM address A13, A14
9	XWE	O	RAM write enable signal
10	XOE	O	RAM output enable signal
11	XEAN	O	External addressing bus interrupt enable signal (Not in use)
12	TST1	I	Test pin (normally "L")
13	XT1O	O	18.816 MHz crystal oscillator output
14	XT1I	I	18.816 MHz crystal oscillator input
15	VSS	—	GND
16	XRST	I	Reset pin (normally"H")
17	CLKO	I/O	18.816 MHz clock output (Not in use)
18	XCST	I/O	SYEK (internal system clock) generation CLKO division timing signal (Not in use)
19	ATSY	I	ATF sync signal input
20	MCLK	O	9.408 MHz clock output
21	DREF	O	Drum servo reference signal
22	SBPM	O	Discrimination signal determining whether the subcode I/O clock (EXCK) is accepted ("L": accept, "H": ignore) (Not in use)
23	EXCK	I	Subcode I/O data transfer clock (DUTY50)
24	SDSI	I	Subcode serial data input
25	SDSO	O	Subcode serial data output
26	SBSY	O	Subcode I/O sync signal
27	COPY	O	Copy data output (Not in use)
28	EMP	O	Emphasis data output (Not in use)
29	MUTE	I	Mute pin
30	MUTM	O	Mute discrimination signal ("H": muted)
31	UNLK	O	RX PLL lock discrimination signal ("H": locked)
32	ERMN	O	Detects presence or absence of RF ("H": RF present, "L" during REC)
33	SYMN	O	C1 check result for RF ("H": OK) (Not in use)
34	CHER	I	Signal for discriminating whether C2 is 1 or 2 times (C2 → C1 → C2 or C1 → C2) ("H": 1 time, "L": 2 times) (Not in use)
35	PLCK	I/O	RF PLL clock output (Not in use)
36	TST2	I	Test pin (normally "L")
37	RFDT	I	RF signal input
38	XCS	I	Subcode I/O chip select ("L": select)
39	SWP	I	RF switching pulse ("L": A-CH, "H": B-CH)
40	VSS	—	GND
41	PIPC	O	REC data PILOT/PCM discrimination signal ("H": PILOT, during playback: always "L")
42	REPB	O	Record/playback switching signal ("H": record)
43	REDT	O	Recording signal output, fixed "L" during playback
44	TST4	I	Test pin (normally "L")
45	PDO	O	RX APLL PD output (comparator output)
46	AMPI	I	RX APLL oscillator cell amp input
47	AMPO	O	RX APLL oscillator cell amp inverted output
48	PLCO	I	RX APLL external VCO clock input

Pin No.	Pin Name	I/O	Description
49	PLVR	O	RX APLL comparison signal when external comparator is active (Vin) Not in use
50	PLRF	O	RX APLL comparison signal when external comparator is active (Rin) Not in use
51	MSSL	I	Master/slave setting ("H": master (fixed with the equipment), "L": slave)
52	RX	I	Digital input
53	VDD	—	5 V
54	TX	O	Digital output
55	AUDR	I	Audio mode/data recorder mode setting ("H": audio mode, "L": data recorder mode)
56	EXSY	I/O	Complete copy sync signal (25/3 - 100/3 Hz)
57	EXSN	I/O	Complete copy sync signal (25/3 - 100/3 Hz)
58	F128	I/O	128fsCK (normal)/256fsCK (×2) (DUTY50)
59	F256	O	256fsCK (normal)/512fsCK (×2) (DUTY50)
60	F512	O	512fsCK (normal)/512fsCK (×2) (DUTY50)
61	ADLF	I	Signal for discriminating whether ADDT serial data is MSB first or LSB first ("H": LSB first)
62	DALF	I	Signal for discriminating whether DADT serial data is MSB first or LSB first ("H": LSB first)
63	XT20	O	22.5792 MHz crystal oscillator output
64	XT21	I	22.5792 MHz crystal oscillator input
65	VSS	—	GND
66	XT30	O	49.152 MHz crystal oscillator output (24.576 MHz in B mode)
67	XT31	I	49.152 MHz crystal oscillator input (24.576 MHz in B mode)
68	FSEN	I	F128, BCK, LRCK input/output switch ("H": output)
69	LR03	O	LR02 inversion
70	LR02	O	LRCK 16BCK delay signal
71	LR01	O	LRCK 15BCK delay signal
72	LRCK	I/O	fs (normal)/2fs (×2) ("L": L-CH, "H": R-CH)
73	WCK	I/O	2fs (normal)/4fs (×2) (input mode only for testing)
74	XBCK	O	BCK inversion
75	BCK	I/O	64fs (normal)/128fs (×2)
76	ADDT	I	Serial AD data (complement of 2)
77	DADT	O	Serial DA data (complement of 2)
78	DADO	I	Digital output (DA) data input (normally connected to DADT)
79	ADDI	O	Digital input (AD) data output (normally connected to ADDN)
80	ADDN	I	Digital input (DA) data input
81	ERRI	I	Digital output V-FLAG data input (normally connected to ERRF)
82	ERRF	O	Signal output for discriminating whether or not DADT has interpolated data ("H": interpolated data)
83	MUTG	O	Error correction status monitor trigger
84-89	D7-D2	I/O	RAM data bus D7-D2
90	VSS	—	GND
91, 92	D1, D0	I/O	RAM data bus D1, D0
93-100	A00-A07	I/O	RAM address A00-A07

IC311 Mechanism/Servo Micon (CXP80524-063Q)

The mechanical deck servo systems are controlled by the captioned micon according to instructions from the main micon (IC312).

Pin No.	Pin Name	I/O	Connected to	Description
1		O		Not in use
2	BUSY	O	Main Micon	Busy (Active "L") to the Main Micon
3		O		Not in use
4	REEL_CCW	O	Mechanism	Reel motor CCW ("L": RVS direction) }*1
5	REEL_CW	O	Mechanism	Reel motor CW ("H": FWD direction)
6	C_DIR_RVS	O	Mechanism	Capstan Direction ("L": FWD, "H": RVS)
7	PLN_ON	O	Mechanism	Plunger On
8	PLN_KICK	O	Mechanism	Plunger Kick
9	D_ON	O	Mechanism	Drum On ("H": The drum is revolving)
10	D_DIR_RVS	O	Mechanism	Not in use
11-16		O		Not in use
17	LE	O	Mechanism	Loading Motor Eject }*2
18	LL	O	Mechanism	Loading Motor Load
19	CAS_M_OUT	O	Mechanism	Cassette control motor Out }*3
20	CAS_M_IN	O	Mechanism	Cassette control motor In
21-24		—		Not in use
25	RE_FWD	I	Mechanism	Encoder SW2 }*4
26	RE_STOP	I	Mechanism	Encoder SW1
27-30	END_LED_ON	O	Mechanism	End sensor ON Illuminated upon "L" (rectangular wave of about 1kHz). It is not output unless a cassette is mounted ("H").
31	MP	I		Microprocessor mode selected (the equipment is fixed at "L").
32	RST	I		System Reset (low active)
33	Vss	—		Power terminal (GND)
34	XTAL	O		System Clock Output (Not in use)
35	EXTAL	I	CXD2601AQ	System Clock Input (9.408 MHz)
36-39		—		Not in use
40	X_SRV_REQ	I	Main Micon	Request for communication from the Main Micon
41	MAIN_DT_I	I	Main Micon	Serial Input from the Main Micon
42	MAIN_DT_O	O	Main Micon	Serial Output to the Main Micon
43	MAIN_CK	I	Main Micon	Serial Clock with the Main Micon
44	AVss	—		GND for A/D
45	AVref	—		Reference Voltage for A/D (+5 V)
46	AVdd	—		Power Supply for A/D (+5 V)
47	T_END	I	Mechanism	Take-up side end sensor input (analog) } Magnetic matter: 0V,
48	S_END	I	Mechanism	Supply side end sensor input (analog) Leader tape: AC (*5)
49	CAS_IN	I	Mechanism	Cassette-in switch (S01). "H": Cassette is mounted.
50	REC_EN	I	Mechanism	Rec-enable switch (S01). "H": REC enabled.
51	CAS_LCKed	I	Mechanism	Casecon locked Upon completion of loading: "H"
52	CAS_OUTed	I	Mechanism	Casecon outed Upon completion of loading OUT: "H"
53		I		Not in use
54	ATF_IN	I	RF Amp	ATF PILOT input
55	FG_T	I	Mechanism	Reel FG (T Side) } 6/24Hz (Small reel diameter) -
56	FG_S	I	Mechanism	Reel FG (S Side) 15/24Hz (Large reel diameter) (In SP FWD)
57	C_FG	I	Mechanism	Capstan FG SP: 674 Hz, LP: 337 Hz
58	D_FG	I	Mechanism	Drum FG 400 Hz: LP REC, 800 Hz: Other modes
59	D_PG	I	Mechanism	Drum PG } Other than LP REC: 800/24Hz
60	D_REF	I	CXD2601AQ	Drum Reference In LP REC: 400/24Hz

Pin No.	Pin Name	I/O	Connected to	Description
61	MST_CK	I	CXD2601AQ	Master clock (9.408MHz)
62	PB_DT	I	RF Amp	PB Data input to create ATF Sync
63	SWP	O	CXD2601AQ	Switching Pulse "L": Ach, "H": Bch
64	D_PWM	O	Mechanism	PWM Out for Drum
65	C_PWM	O	Mechanism	PWM Out for Capstan
66	PWM_R	O	Mechanism	PWM Out for Reel
67	TEN_PWM	O	Mechanism	PWM Out for Tension Regulator Plunger
68	AGC_PWM	O	RF Amp	PWM Out for AGC
69	SBSY	I	CXD2601AQ	↓ of subsync is detected (XINT2).
70	$\overline{\text{TEST}}$	I	Pull-up	Test Mode (active "L")
71	POW_DN	I		Not in use
72	Vdd	—		Power terminal (+5 V)
73	Vss	—		Power terminal (GND)
74		—		Not in use
75	ATF_S2	O	CXD2601AQ	ATF Sampling Pulse
76-80		—		Not in use

* 1 Reel motor control

	CCW (counterclockwise)	CW (clockwise)
STOP (only in POWER ON)	L	L
FWD	L	H
RVS	H	L
Prohibit	H	H

*2 Loading motor control

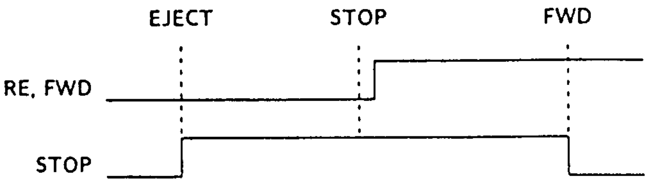
	LE	LL
—	L	L
LOAD	L	H
EJECT	H	L
Brake	H	H

*3 Casecon motor control

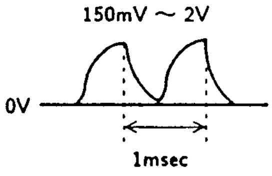
	OUT	IN
—	L	L
IN	L	H
OUT	H	L
Brake	H	H

*4 Encoder

RF-FWD	RE_STOP	Position
L	L	EJECT
L	H	STOP UNLD-STOP
H	L	FWD
H	H	STOP-FWD



*5 End sensor



With leader tape

IC312 Main Micon (CXP80524-062Q)

This Micon generally controls the operation of the equipment while exchanging data with the display micon (IC701) and mechanism/servo micon (IC311) in serial communications, including the DAT signal processor (IC307), digital filter (IC363) and other IC.

Pin No.	Pin Name	I/O	Connected to	Description
1	VCO EN	O	VCO Circuit	VCO enable out
2	L_MUTE	O	Line Out	Line Mute (Active "L")
3		O		Not in use
4		O		Not in use
5	WRT	O	Clock IC	Write request (Active "L")
6	RD	O	Clock IC	Read request (Active "L")
7-10	ADRS_3-0	O	Clock IC	Address 3-0 (Address BUS)
11-14	DATA_7-4	I/O		DATA 7-4 (DATA BUS). Not in use with the equipment
15-18	DATA_3-0	I/O	Clock IC	DATA 3-0 (DATA BUS)
19	ATT_EXT	O	CXD1136Q	Fade attenuator ck externally selected (Active "L")
20	DIG/ANA	O	CXD1136Q	Fade In/Out switching for DIG ("L")/ANA ("H")
21	REC/PB	O	CXD1136Q	Fade In/Out REC switching for ("L")/PB ("H")
22	ATT_CK	O	CXD1136Q	Clock for fade In/Out
23	DTR	O	CXD2601AQ	Audio use ("H")/Data Recorder use ("L). Becomes "L" in after-recording and searching.
24	OPT/COA	O	Digital I/O	Switching for Optical ("L")/Coaxial ("H")
25	FS32	O	1Bit DAC	"H" upon Fs = 32kHz. "L" for others.
26	RAM_SEL	O		Not in use
27	DISP_REQ	O	Display Micon	Request for communication with the Display Micon ("L" Active)
28	SD_SEL	O	CXD2601AQ	Request for communication with CXD2601 ("L" Active)
29	SRV_REQ	O	Mechanism Micon	Request for communication with the Mechanism Micon ("L" Active)
30	CLOCK_SEL	O	Clock IC	Clock IC chip selected
31	MP	I		Microprocessor mode selected (fixed at "L" with the equipment)
32	RST	I		System Reset ("L" Active)
33	Vss	—		Power terminal (GND)
34	XTAL	O		System Clock Output (Not in use)
35	EXTAL	I	CXD2601AQ	System Clock Input (9.048 MHz)
36	DISP_ACK	I	Display Micon	ACKnowledge (Active "L")
37	DISP_DT_I	I	Display Micon	Serial Input
38	DISP_DT_O	O	Display Micon	Serial Output
39	DISP_CK	I	Display Micon	Serial clock
40	SBSY	I	CXD2601AQ	Subcode sync
41	SR_DT_IN	I	CXD2601AQ & Mechanism Micon	Serial Data In
42	SR_DT_OUT	O		Serial Data Out
43	SR_CK	I/O		Serial clock (In/Out) to Sub Code Interface
44	AVss	—		GND for A/D
45	AVref	—		Reference Voltage for A/D (+5 V)
46	AVdd	—		Power Supply for A/D (+5 V)
47		I		Not in use
48		I		Not in use
49	BUSY	I	Mechanism Micon	Mechanism servo micon Busy (Active "L")
50	AU_BUS_IN	I	Pull-up	Not in use

Pin No.	Pin Name	I/O	Connected to	Description
51	TM_IN	I	Clock IC	TM_OUT for clock IC
52	MUT_MON	I	CXD2601AQ	Mute monitor (Active "H")
53	LVL_SYNC	I	Audio Block	Start ID is written by entering Level Sync Input audio.
54		I		Not in use
55	$\overline{\text{TRQ\_TEST}}$	I	Pull-up	Not in use
56	$\overline{\text{NO\_CAS\_TEST}}$	I	Pull-up	Not in use
57	TIME_$\overline{\text{24}}$/12	I	Pull-up	Time indication "H": 12 hours (AM, PM) "L": 24 hours display
58	DATE_ORDER	I	Pull-up	Order of DATA display "H": Year, month and day "L": Month, day and year
59-62	AF_3-0	I	Pull-up	Not in use
63		O	Pull-up	Not in use
64	$\overline{\text{L\_MUTE}}$	O		Line Mute (Active "L"). Not in use with the equipment (Not in use)
65	$\overline{\text{TR\_MUTE}}$	O	Line Out	Transistor Mute (Active "L")
66	MUTE_1136	O	CXD1136Q	Mute for CXD1136Q (Active "H")
67	MUTE_2601	O	CXD2601AQ	Mute for CXD2601 (Active "H")
68	A_D_PWR_DWN	O	CS5339	A/D Converter Power Down Mode (Active "H"). The AD converter is turned OFF upon digital input/output.
69	ER_MON	I	CXD2601AQ	Error Monitor (Data Valid)
70	$\overline{\text{TEST}}$	I	Pull-up	Test Mode (Active "L")
71	POW_DN	I	+5 V	Not in use
72	Vdd	—		Power terminal (+5V)
73	Vss	—		Power terminal (GND)
74		—	Pull-up	Not in use
75	D_F_ATT	O	CXD2560M	Communication line (Serial Data) with Digital Filter
76	D_F_$\overline{\text{SHIFT}}$	O	CXD2560M	Communication line with Digital Filter (Shift Clock; shifted by ↓ and taken in by ↑)
77	D_F_$\overline{\text{LATCH}}$	O	CXD2560M	Communication line (Latch Pulse) with Digital Filter
78, 79	MODE2, 1	O		Mode Control of the RF amplifier (Not in use)
80	ADRS	O		Not in use

IC330 Real Time Clock (RP5C62)

The Clock is an IC for clock and calendar and backed up by a lithium battery when the power supply to the set is OFF.

Pin No.	Pin Name	I/O	Description
1	$\overline{\text{CS}}$	I	Chip select input. Active "L"
2	CE	I	Chip enable input. Active "H"
3	TMOUT	O	Interval output
4-7	A0-3	I	4 bit address input
8	$\overline{\text{RD}}$	I	Read-out control input
9	Vss	–	Power terminal (GND)
10	$\overline{\text{WR}}$	I	Write-in control input
11-14	D0-3	I/O	4 bit data input/output
15	$\overline{\text{INTR}}$	O	Interrupt output. A 2048Hz signal is output here with the equipment.
16	OSCIN	I	Clock input (32.768kHz)
17	OSCOUT	O	Clock output
18	V_{DD}	–	Power terminal (+5 V)

IC701 Display Micon (CXP5058H-659Q)

The Micon controls key input, FL tube display, remote control signal input, level meter (IC702) and EEP-ROM (IC703) according to instructions from the Main Micon (IC312).

Pin No.	Pin Name	I/O	Connected to	Description
1-18	e_-v_SEG	O	FL tube FL701	FL Segment 'e'-'v'
19-28	10_-1_G	O	FL tube FL701	FL Grid #10-#1
29	DSP_REQ	I	MAIN Micon	Communication request ("L" Active)
30	XTAL	—	Ceramic oscillator	
31	EXTAL	I	Ceramic oscillator	4.19MHz ceramic oscillator
32	RST	I		System Reset ("L" active)
33	NC	—		Not in use
34	Vdd	I		Power terminal (+5 V)
35-42	AD_0-7	I	Panel switch	Key input A/D converter input #0 - #7
43	NC	—		Not in use
44	DISP_CK	O	MAIN Micon	Shift clock
45	SO	O	MAIN Micon	Serial data OUT
46	SI	I	MAIN Micon	Serial data IN
47	DSP_ACK	O	MAIN Micon	Acknowledge (Active"L")
48	TEST	I	Pull-up	Test mode (Active"L")
49	COUNTER MODE	I	S704	MODE (counter) switch (Active"L")
50	REC MODE	I	S705	REC MODE "H": Standard, "L": Long
51-54	LVL_DT_0-3	I/O	Level Meter IC	Level Meter Data 0-3
55, 56	LVL_ADRS_0, 1	O	Level Meter IC	Level Meter Data 0, 1
57	LVL_RD	O	Level Meter IC	Level Meter Read Mode (Active "L")
58	LVL_WR	O	Level Meter IC	Level Meter Write Mode (Active "L")
59	LVL_SEL	O	Level Meter IC	Level Meter IC Select (Active "L")
60	RM_SEL	O	Open	External remote controller selected (not in use)
61	RMC MON	I	Remote sensor	Remot control signal input
62	RMC	I	Remote sensor	Remot control signal input
63	RMC_CAT	I	Pull-down	Remote control category "L": DAT1, "H": DAT2. Fixed at "L" with the equipment.
64	TR_MUTE	I	IC431	Level meter mute (Active "L")
65	BUSY	I	EEPROM	BUSY signal (Active "L")
66	ROM_DT_IN	I	EEPROM	Data input
67	ROM_DT_OUT	O	EEPROM	Data output
68	SHIFT_CK	O	EEPROM	Shift clock
69	CE	O	EEPROM	Chip enable
70	DTC/XPCM	I	Pull-up	Equipment model discrimination input. Fixed at "H" with the equipment
71	Vss	I		Power terminal (GND)
72	TX	—	Open	Not in use
73	NC	—	Open	Not in use
74	TEX	—	+5 V	Not in use
75	Vref	I	+5 V	Analog board reference voltage
76	Vfdp	I	–25 V	FL display tube driving voltage
77-80	a_-d_SEG	O	FL tube	FL Segment 'a'-'d'

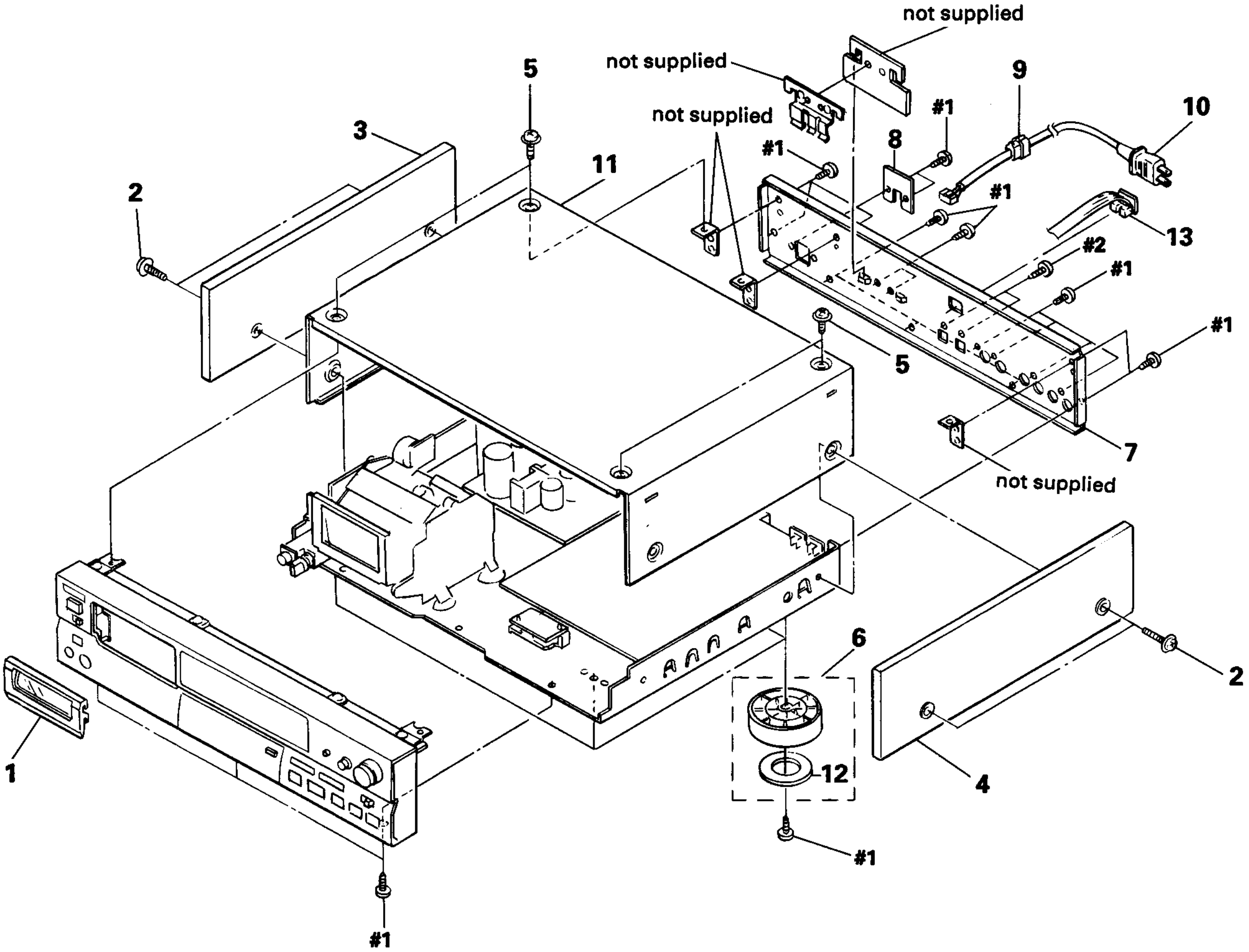
SECTION 5
EXPLODED VIEWS

NOTE:
- -XX, -X mean standardized parts, so they may have some differences from the original one.
- Color Indication of Appearance Parts
  Example:
  KNOB,BALANCE(WHITE)...(RED)
  ↑ ↑
  Parts color Cabinet's color
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware(# mark) list is given in the last of this parts list.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

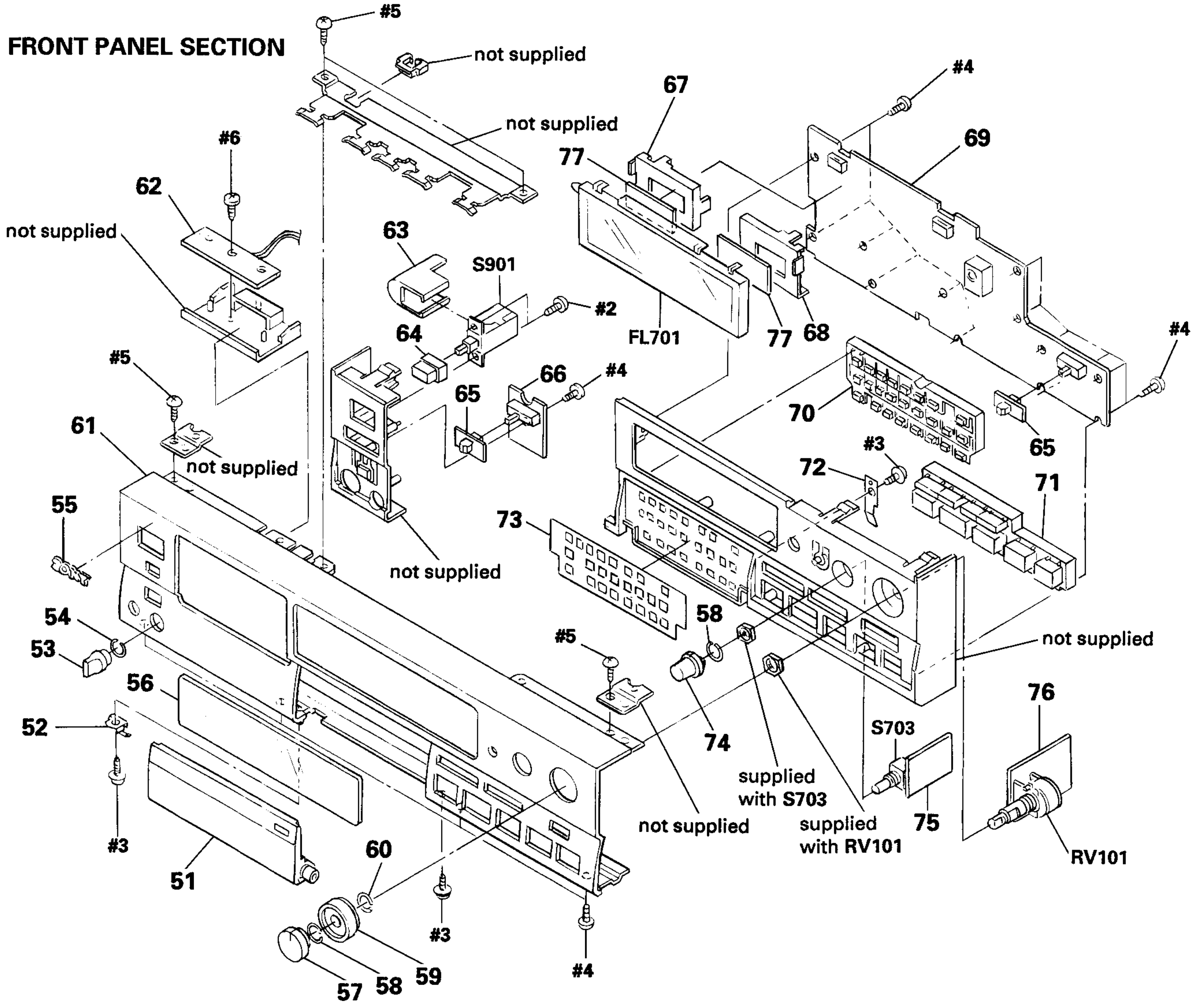
5-1. CABINET SECTION



Ref. No.	Part No.	Description	Remarks
1	X-3365-595-1	PANEL (CASSETTE) ASSY (AEP:GOLD)	
1	X-3365-599-1	PANEL (CASSETTE) ASSY (US, Canadian, E/AEP:BLACK)	
2	4-933-446-01	SCREW (SIDE PANEL)	
3	X-3365-593-1	PANEL (L) ASSY, SIDE (AEP:GOLD)	
3	X-3365-634-1	PANEL (L) ASSY, SIDE (AEP:BLACK)	
3	X-3365-636-1	PANEL (L) ASSY, SIDE (US, Canadian, E)	
4	X-3365-594-1	PANEL (R) ASSY, SIDE (AEP:GOLD)	
4	X-3365-635-1	PANEL (R) ASSY, SIDE (AEP:BLACK)	
4	X-3365-637-1	PANEL (R) ASSY, SIDE (US, Canadian, E)	
5	3-704-366-01	SCREW (CASE) (M3X8) (US, Canadian, E/AEP:BLACK)	
5	3-704-366-11	SCREW (CASE)(M3X8) (AEP:GOLD)	
6	X-3304-938-2	FOOT ASSY (US, Canadian, E/AEP:BLACK)	
6	X-4928-110-1	FOOT ASSY (AEP:GOLD)	

Ref. No.	Part No.	Description	Remarks
* 7	3-382-125-11	PANEL, BACK (AEP:BLACK)	
* 7	3-382-125-21	PANEL, BACK (US, Canadian)	
* 7	3-382-125-31	PANEL, BACK (E)	
* 7	3-382-125-51	PANEL, BACK (AEP:GOLD)	
* 8	4-923-873-01	BRACKET, CORD STOPPER	
* 9	3-703-244-00	BUSHING (2104), CORD (AEP)	
9	4-916-783-01	BUSHING, CORD (US, Canadian, E)	
⚠10	1-559-297-31	CODE, POWER (E)	
⚠10	1-559-479-11	CORD, POWER (US, Canadian)	
⚠10	1-575-912-11	CORD, POWER (AEP)	
11	4-934-008-01	CASE (US, Canadian, E/AEP:BLACK)	
11	4-934-008-11	CASE (AEP:GOLD)	
12	4-923-836-11	CUSHION	
13	1-590-321-71	LEAD (WITH CONNECTOR)(CONTROL-S IN) (US, Canadian)	

5-2. FRONT PANEL SECTION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#6
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#4
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#4
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#3
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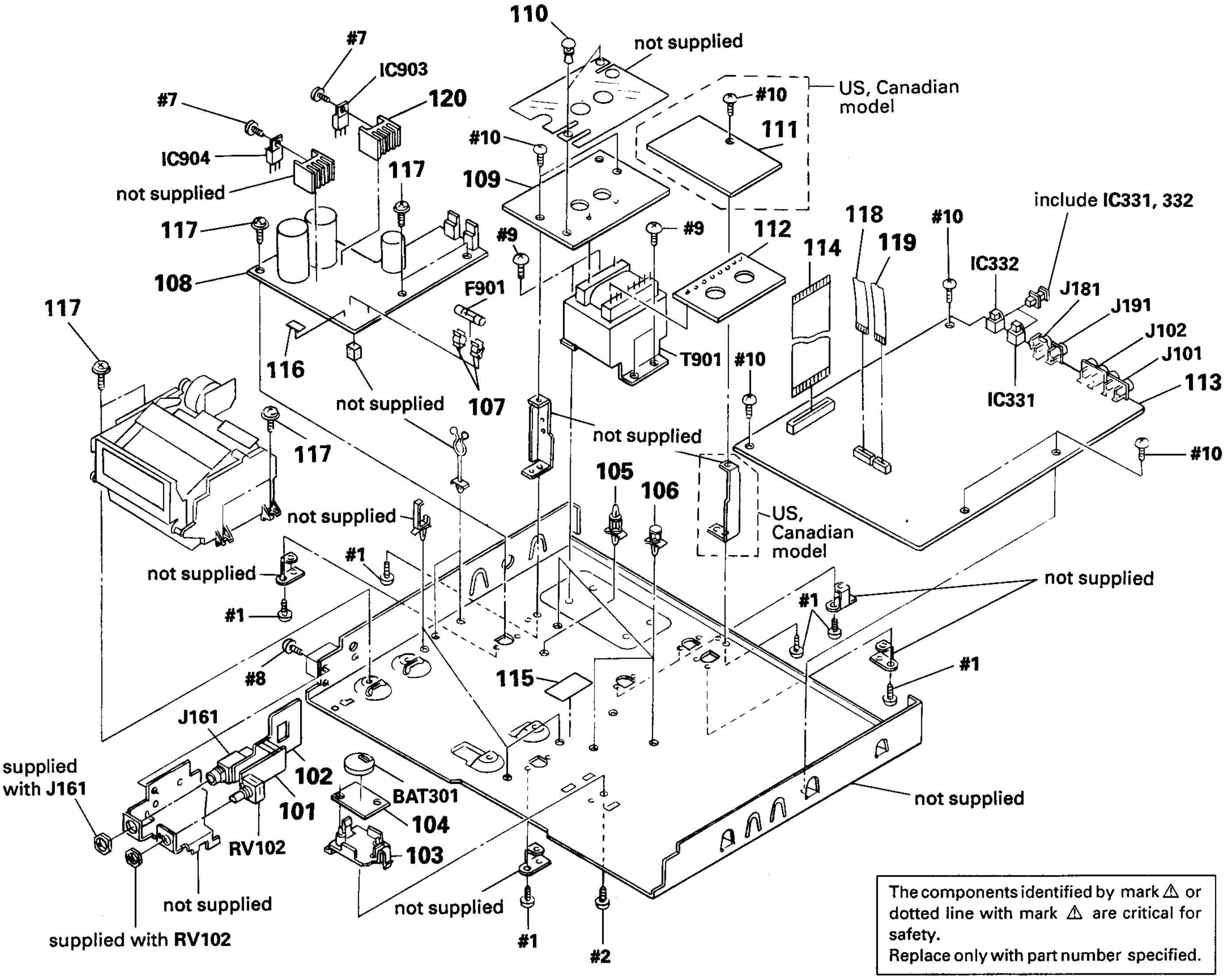
72
71
55
73
not supplied
54
58
not supplied
53
#5
76
56
S703
74
52
supplied with S703
not supplied
supplied with RV101
75
RV101
#3
60
51
#3
#4
57
58
59

Ref. No.	Part No.	Description	Remarks
51	A-2004-110-A	LID ASSY (US, Canadian, E/AEP:BLACK)	
51	A-2004-144-A	LID ASSY (AEP:GOLD)	
52	3-382-757-01	PLATE (GROUND)	
53	3-354-931-01	KNOB (DIA. 10) (US, Canadian, E/AEP:BLACK)	
53	3-354-931-31	KNOB (DIA. 10) (AEP:GOLD)	
54	3-354-981-01	SPRING (SUS), RING (US, Canadian, E/AEP:BLACK)	
54	3-356-935-01	SPRING (AEP:GOLD)	
55	4-908-848-01	EMBLEM, SONY (US, Canadian, E/AEP:BLACK)	
55	4-908-848-21	EMBLEM, SONY (AEP:GOLD)	
56	3-382-629-01	WINDOW (FL TUBE)	
57	3-382-635-01	KNOB (REC-R) (US, Canadian, E/AEP:BLACK)	
57	3-382-635-11	KNOB (REC-R) (AEP:GOLD)	
58	3-356-957-01	SPRING	
59	3-382-634-01	KNOB (REC-L) (US, Canadian, E/AEP:BLACK)	
59	3-382-634-11	KNOB (REC-L) (AEP:GOLD)	
60	3-382-627-01	SPRING, RING	
61	3-382-649-01	PANEL (FRONT) (E/AEP:BLACK)	
61	3-382-649-11	PANEL (FRONT) (AEP:GOLD)	
61	3-382-649-21	PANEL (FRONT) (US, Canadian)	
* 62	1-645-241-11	LED BOARD	
63	3-575-524-00	COVER, POWER SWITCH	
64	4-917-460-01	KNOB, POWER (US, Canadian, E/AEP:BLACK)	
64	4-917-460-51	KNOB, POWER (AEP:GOLD)	
65	3-382-651-01	KNOB (US, Canadian, E/AEP:BLACK)	
65	3-382-651-11	KNOB (AEP:GOLD)	
* 66	1-645-243-11	TIMER SW BOARD	
* 67	4-922-524-01	HOLDER (LEFT)	
* 68	4-922-523-01	HOLDER (RIGHT)	
* 69	A-2006-811-A	CONTROL SW BOARD, COMPLETE (AEP, E)	
* 69	A-2006-865-A	CONTROL SW BOARD, COMPLETE (US, Canadian)	
70	3-382-628-01	BUTTON (SUB) (US, Canadian, E/AEP:BLACK)	
70	3-382-628-11	BUTTON (SUB) (AEP:GOLD)	
71	3-382-644-01	BUTTON (MAIN) (US, Canadian, E/AEP:BLACK)	
71	3-382-644-11	BUTTON (MAIN) (AEP:GOLD)	
72	3-382-623-01	SPRING, LEAF	
73	3-382-639-01	SHEET (US, Canadian, E/AEP:BLACK)	
73	3-382-639-11	SHEET (AEP:GOLD)	
74	3-364-173-11	KNOB (BAL) (US, Canadian, E/AEP:BLACK)	
74	3-364-173-21	KNOB (BAL) (AEP:GOLD)	
* 75	1-645-240-11	INPUT SW BOARD	
* 76	1-645-239-11	REC VOL BOARD	
77	9-911-839-XX	CUSHION	
FL701	1-519-672-21	INDICATOR TUBE, FLUORESCENT	
⚠S901	1-554-920-21	SWITCH, PUSH (AC POWER) (1 KEY) (POWER)	

5-3. CHASSIS SECTION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T901
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#10
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#1
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BAT301
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RV102
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not supplied
supplied with RV102
#1
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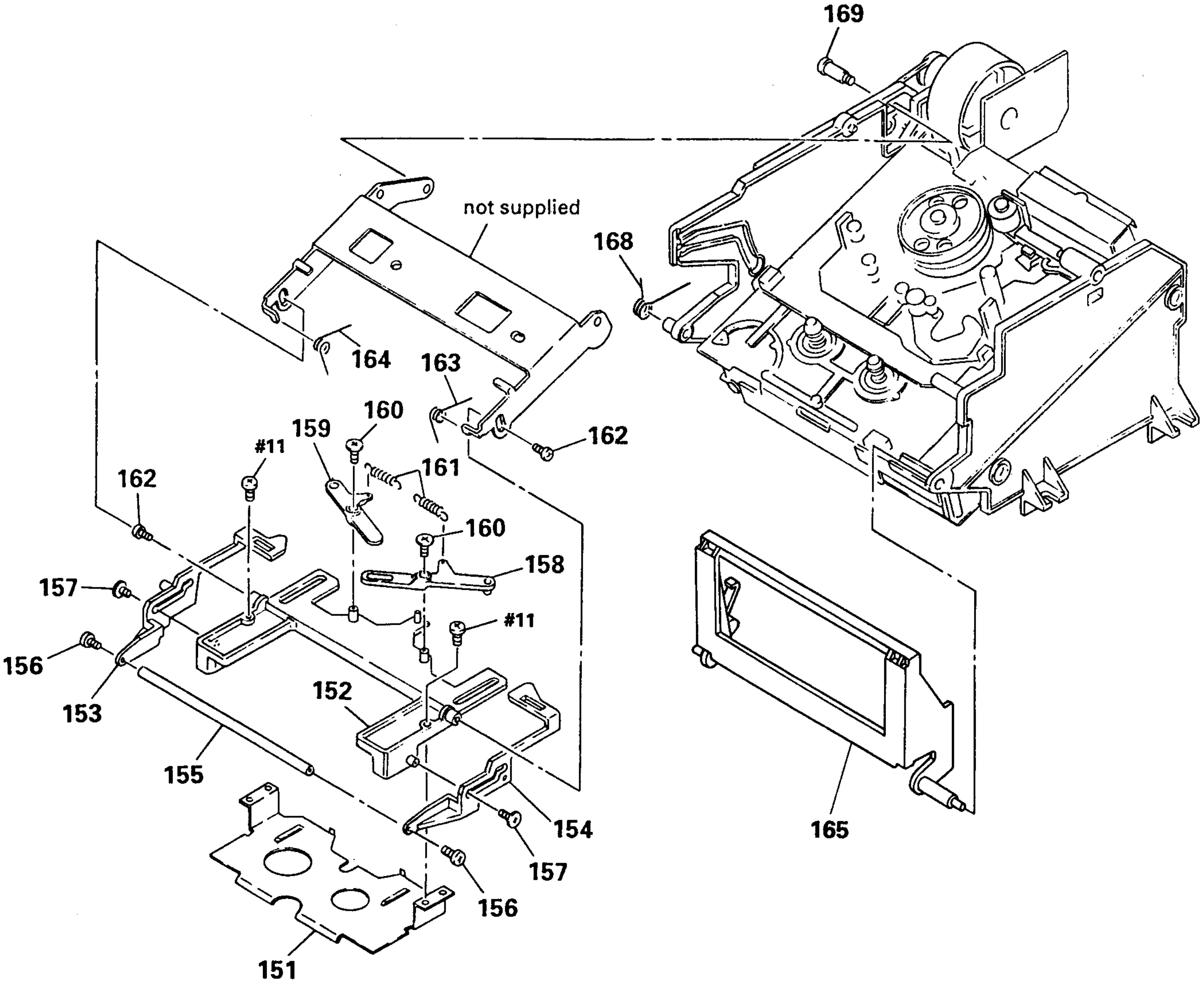
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

Ref.No.	Part No.	Description	Remarks
* 101	1-645-245-11	HEADPHONE VOL BOARD	
* 102	1-645-244-11	HEADPHONE JACK BOARD	
* 103	3-382-640-11	HOLDER (BATTERY)	
* 104	1-645-242-11	BATTERY BOARD	
* 105	3-346-265-11	HOLDER, PC BOARD	
* 106	3-670-570-00	SPACER, SUPPORT	
107	1-533-183-11	HOLDER, FUSE	
* 108	A-2006-819-A	POWER BOARD, COMPLETE	
* 109	1-645-234-11	PRIMARY BOARD	
110	4-812-134-00	RIVET NYLON, 3.5	
* 111	1-645-237-11	CONTROL (S) BOARD (US, Canadian)	
* 112	1-645-235-11	RELAY BOARD	
* 113	A-2006-863-A	MAIN BOARD, COMPLETE (AEP)	
* 113	A-2006-866-A	MAIN BOARD, COMPLETE (US, Canadian, E)	
114	1-590-915-11	WIRE, FLAT TYPE (30 CORE)	
* 115	3-703-044-26	LABEL, CAUTION (US, Canadian)	
116	3-701-947-15	LABEL (T2.5A), FUSE (AEP, E)	
117	4-886-821-11	SCREW, S TIGHT, +PTTWH 3X6	
118	1-590-916-11	WIRE, FLAT TYPE (10 CORE)	
119	1-590-914-11	WIRE, FLAT TYPE (6 CORE)	
* 120	4-363-146-71	HEATSINK, V.OUT	
⚠BAT301	1-528-229-11	BATTERY, LITHIUMCR-2450	
⚠F901	1-532-744-11	FUSE, GLASS TUBE (2.5A) (US, Canadian)	
⚠F901	1-532-286-11	FUSE, TIME-LAG (T2.5A) (AEP, E)	
⚠T901	1-450-556-21	TRANSFORMER, POWER (US, Canadian)	
⚠T901	1-450-557-21	TRANSFORMER, POWER (AEP)	
⚠T901	1-450-558-21	TRANSFORMER, POWER (E)	

5-4. MECHANISM SECTION 1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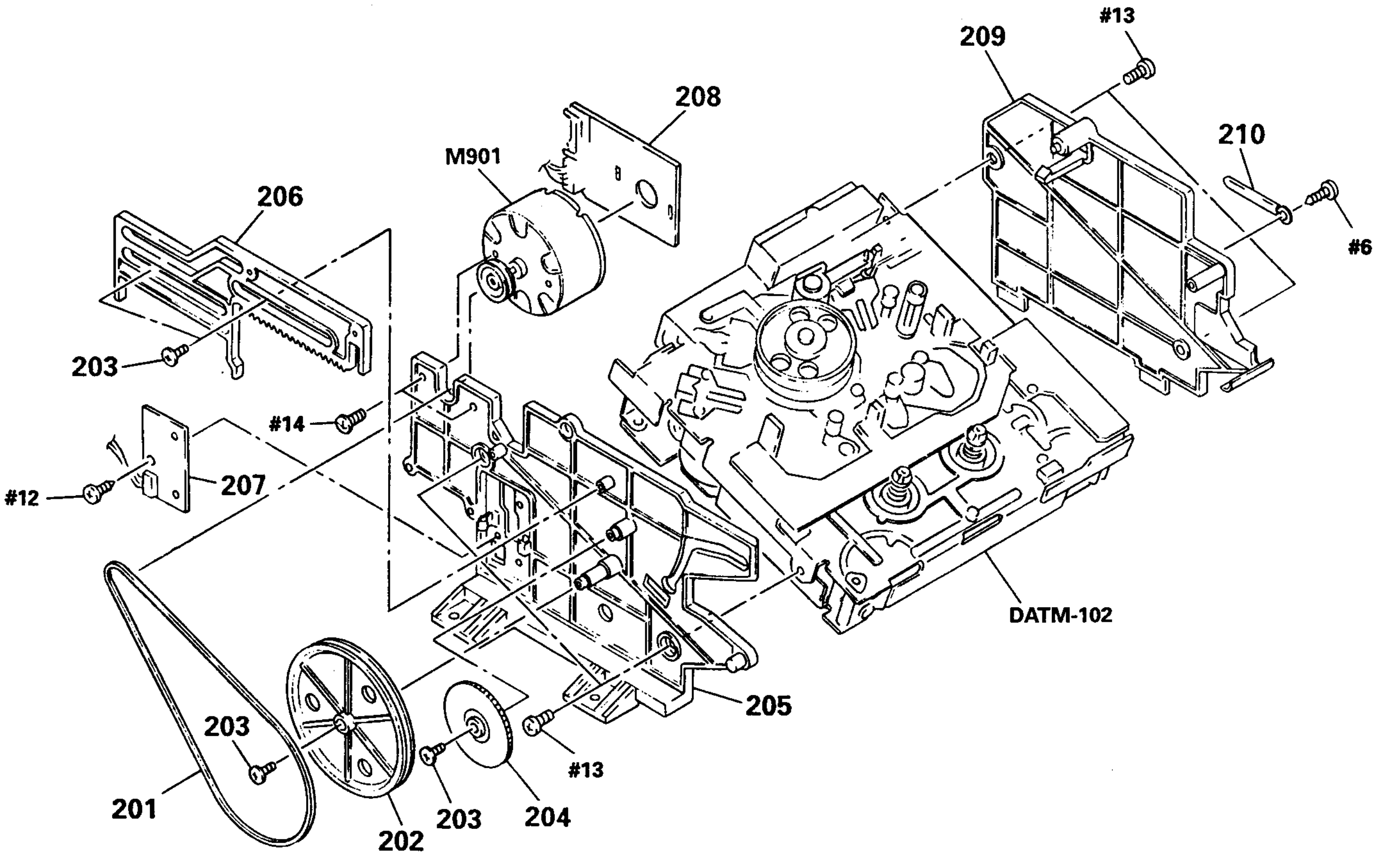
Ref. No.	Part No.	Description	Remarks
151	3-373-224-01	HOLDER (LOWER)	
152	3-373-237-01	HOLDER (UPPER), CASSETTE	
153	3-373-223-01	SLIDER (L)	
154	3-373-222-01	SLIDER (R)	
* 155	3-373-217-01	SHAFT (JOINT)	
156	3-345-648-01	SCREW (M1.4X3.0), TOOTHED LOCK	
157	3-318-201-11	SCREW (B) (1.4X3), TAPPING	
158	3-373-218-01	LEVER (R)	
159	3-373-219-01	LEVER (L)	
160	2-623-756-01	SCREW, (B1.7X3), TAPPING	
161	3-632-859-00	SPRING, BRAKE LEVER RETURN	
162	3-318-203-61	SCREW (B1.7X4), TAPPING	
163	3-373-215-01	SPRING (R), TORSION	
164	3-373-216-01	SPRING (L), TORSION	
165	3-382-648-01	HOLDER (WINDOW)	
168	3-373-212-01	SPRING (HOLDER)	
169	4-931-471-01	SCREW (STEP)	

5-5. MECHANISM SECTION 2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M901
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#6
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#14
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DATM-102
205
203
#13
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202
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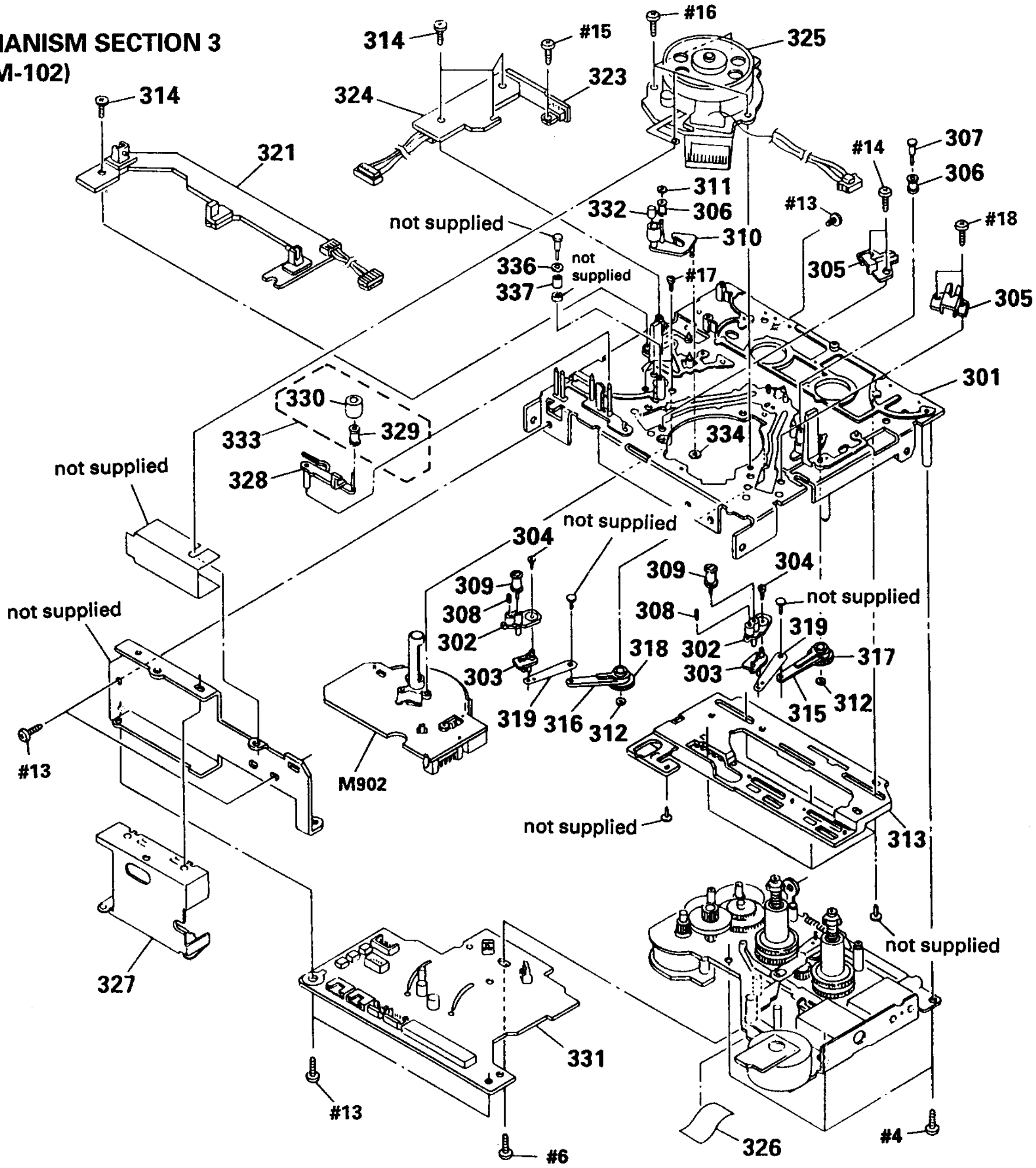
204

Ref.No.	Part No.	Description	Remarks
201	4-931-470-01	BELT (DRIVING)	
202	3-373-214-01	PULLEY	
203	2-623-756-01	SCREW, (B1.7X3), TAPPING	
204	3-373-213-01	GEAR, DRIVING	
205	3-373-234-04	CHASSIS (L)	
206	3-373-221-01	SLIDER (RACK)	
* 207	1-641-487-11	SW BOARD	
* 208	1-641-486-11	MOTOR BOARD	
* 209	3-373-235-03	CHASSIS (R)	
210	3-703-150-11	STOPPER, WIRING	
M901	A-2003-910-A	MOTOR ASSY, CASSETTE (CASSETTE COMPARTMENT)	

5-6. MECHANISM SECTION 3 (DATM-102)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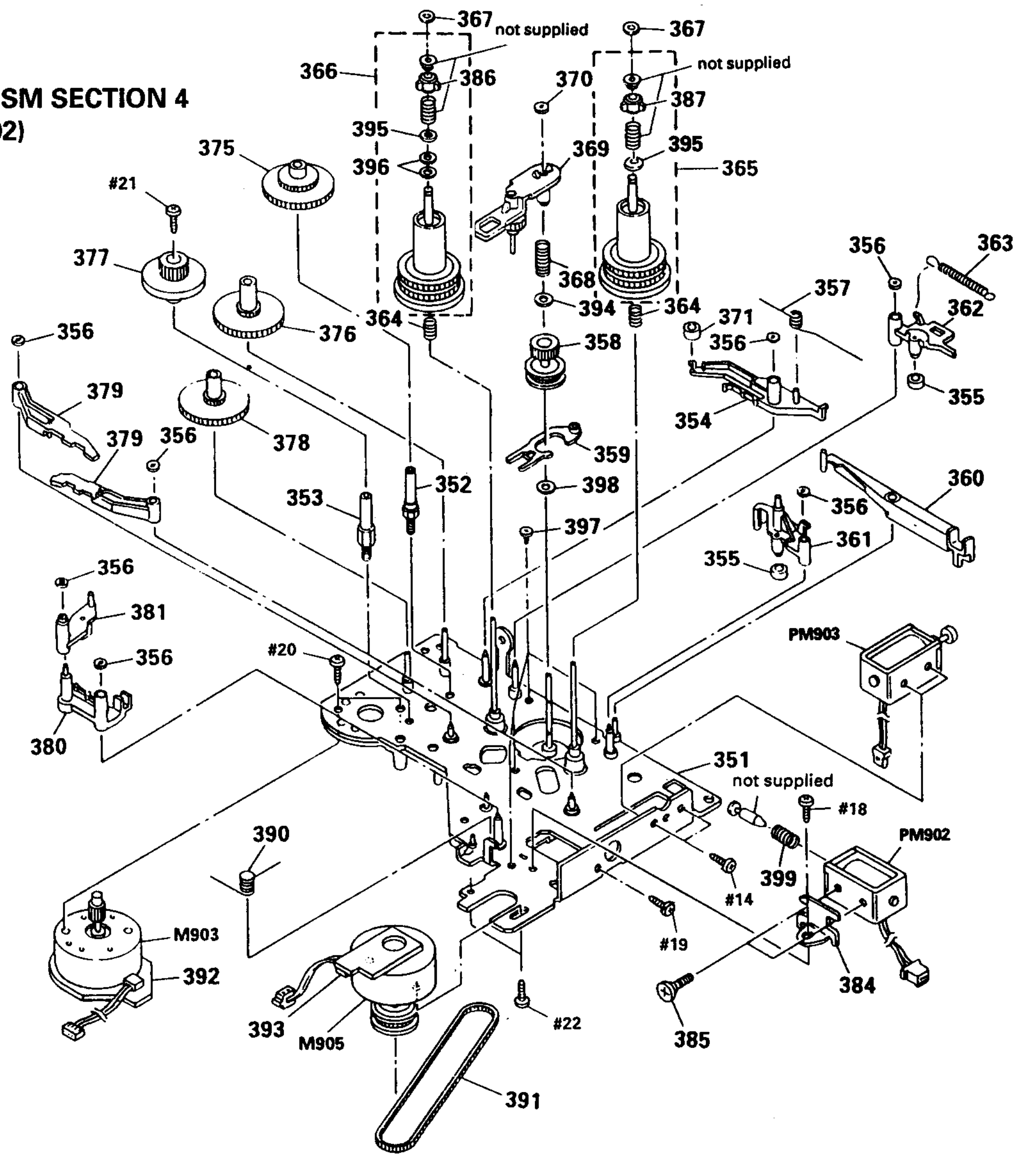
315
#13
M902
313
not supplied
not supplied
327
331
#13
#6
326
#4

Ref. No.	Part No.	Description	Remarks
* 301	3-368-462-01	CHASSIS (OUTSERT), MECHANICAL	
* 302	3-368-390-01	BASE (#1 GUIDE)	
303	3-368-409-01	JOINT (#1 GUIDE)	
304	3-368-413-01	SCREW, +P (1) B1.4X2.5	
* 305	3-368-442-01	CATCHER	
306	3-368-399-01	GUIDE, ROLLER	
307	3-368-428-01	SHAFT (ROLLER GUIDE)	
308	3-368-436-01	SPRING (#1 GUIDE), COMPRESSION	
309	X-3337-643-1	GUIDE (RIC) ASSY, ROLLER	
310	X-3363-025-1	PINCH (LEVER) ASSY	
311	3-315-384-31	WASHER, STOPPER	
312	3-368-398-01	BUSHING	
* 313	A-2003-708-A	SLIDER ASSY, CAM	
314	3-372-761-01	SCREW (M1.7X4), TAPPING	
315	3-368-427-01	LEVER (LOAD-T)	
316	3-368-426-01	LEVER (LOAD-S)	
317	3-368-444-01	GEAR (LOAD-T)	
318	3-368-443-01	GEAR (LOAD-S)	
319	3-368-415-01	SHAFT (LOAD LEVER JOINT)	
* 321	1-639-305-11	TOP END SENSOR BOARD	
* 323	1-639-301-11	RGN SW BOARD	
* 324	1-639-306-11	CAM SLIDER BOARD	
325	8-848-567-11	DRUM ASSY DOU-03A	
326	9-911-835-XX	SPACER	
* 327	A-2001-587-A	RF COMPLETE ASSY	
328	3-368-459-01	LEVER (CLEANER)	
329	3-353-812-01	COLLAR (ROLLER)	
330	3-352-518-01	ROLLER (CLEANER)	
* 331	A-2056-488-A	DRUM DRIVE BOARD, COMPLETE	
332	3-337-626-01	CAP, PINCH ROLLER	
333	X-3337-655-1	ROLLER (CLEANER) ASSY	
334	3-321-813-01	WASHER, COTTER POLYETHYLENE	
336	3-337-677-01	FLANGE	
337	3-337-676-01	GUIDE, FIXED	
M902	8-835-361-01	MOTOR, DC U-17B (CAPSTAN)	

5-7. MECHANISM SECTION 4 (DATM-102)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PM902
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#14
M903
#19
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393
M905
#22
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391

Ref. No.	Part No.	Description	Remarks
* 351	A-2003-857-A	CHASSIS (REEL) ASSY	
* 352	3-368-420-01	SHAFT (CAM DRIVE GEAR C)	
* 353	3-368-419-01	SHAFT (CAM DRIVE GEAR D)	
* 354	3-368-455-01	LEVER (GEAR LOCK)	
355	3-368-418-01	TUBE (BREAK)	
356	3-368-398-01	BUSHING	
357	3-368-430-01	SPRING (GEAR LOCK)	
358	X-3363-022-1	GEAR (REEL DRIVE) ASSY	
* 359	3-368-411-01	SLIDER (REEL LOCK)	
* 360	3-368-453-01	LEVER (BRAKE SOLENOID)	
* 361	3-368-447-01	LEVER (BRAKE S)	
* 362	3-368-446-01	LEVER (BRAKE T)	
363	3-368-438-01	SPRING (BREAK), TENSION	
364	3-368-432-01	SPRING (FF/REW), COMPRESSION	
365	A-2003-709-A	TABLE (S) ASSY, REEL	
366	A-2003-710-B	TABLE (T) ASSY, REEL	
367	3-578-224-00	WASHER	
368	3-368-435-01	SPRING (FR LEVER), COMPRESSION	
369	X-3364-581-1	LEVER (F/R) ASSY	
370	3-315-384-31	WASHER, STOPPER	
371	3-377-332-01	TUBE (BREAK2)	
375	3-368-421-01	GEAR (CAM DRIVE C)	
376	3-373-039-01	GEAR (CAM DRIVE B)	

Ref. No.	Part No.	Description	Remarks
377	3-368-403-01	GEAR (CAM DRIVE D)	
378	3-368-402-01	GEAR (CAM DRIVE A, B)	
379	X-3363-024-1	LEVER (BT) ASSY	
* 380	3-368-451-01	LEVER (BT SOLENOID)	
* 381	3-368-454-01	LEVER (BT SELECTION)	
* 384	3-368-416-01	BRACKET (B. T SOLENOID)	
385	3-368-423-01	SCREW (M2. 6), STEP	
386	2-623-736-01	CLAW (C) (LEFT), REEL	
387	2-623-752-01	CLAW (C) (RIGHT), REEL	
390	3-368-431-01	SPRING (B. T SOLENOID)	
391	3-368-417-01	BELT (170TN10-1. 0T), TIMING	
* 392	1-639-303-11	CAM MOTOR BOARD	
* 393	1-639-304-11	REEL MOTOR BOARD	
394	3-738-212-21	RETAINER, THRUST REEL TABLE	
395	3-701-443-11	WASHER	
396	3-701-443-21	WASHER, 5 DIA.	
397	2-623-756-01	SCREW, (B1. 7X3), TAPPING	
398	3-701-436-01	WASHER, 1. 6	
399	3-370-480-01	SPRING (BT), COMPRESSION	
M903	X-3363-109-1	MOTOR (CAM) ASSY	
M905	X-3363-110-1	MOTOR (REEL) ASSY	
PM902	1-454-536-11	SOLENOID, PLUNGER (BT CONTROL)	
PM903	1-454-535-11	SOLENOID, PLUNGER (BRAKE)	

SECTION 6
ELECTRICAL PARTS LIST

NOTE:

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

When indicating parts by reference number, please include the board name.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms
  METAL : Metal-film resistor
  METAL OXIDE : Metal Oxide-film resistor
  F : nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u : μ, for example :
  uA...: μA..., uPA...: μPA...,
  uPB...: μPB..., uPC...: μPC...,
  uPD...: μPD...
- CAPACITORS
  uF : μF
- COILS
  uH : μH

BATTERY | CAM MOTOR | CAM SLIDER | CONTROL (S) | CONTROL SW

Ref. No.	Part No.	Description	Remarks
*	1-645-242-11	BATTERY BOARD *************	
		< BATTERY >	
⚠BAT301	1-528-229-11	BATTERY, LITHIUM (CR-2450)	
		< CONNECTOR >	
* CN371	1-564-337-00	PIN, CONNECTOR 3P	(US, Canadian)
* CN381	1-564-705-11	PIN, CONNECTOR (SMALL TYPE) 3P	(US, Canadian)
**			
*	1-639-303-11	CAM MOTOR BOARD ***************	
		< CAPACITOR >	
C06	1-163-077-00	CERAMIC CHIP 0.1uF 10% 25V	
**			
*	1-639-306-11	CAM SLIDER BOARD ****************	
		< JUMPER RESISTOR >	
JW04	1-216-296-00	METAL CHIP 0 5% 1/8W	
JW05	1-216-296-00	METAL CHIP 0 5% 1/8W	
		< SWITCH >	
SW1	1-570-953-11	SWITCH, PUSH (1 KEY) (STOP DET)	
SW2	1-570-953-11	SWITCH, PUSH (1 KEY) (FWD DET)	
**			
*	1-645-237-11	CONTROL (S) BOARD (US, Canadian) *******************************	
	4-870-539-00	PLATE, GROUND (US, Canadian)	
		< CAPACITOR >	
C801	1-164-159-11	CERAMIC 0.1uF	50V (US, Canadian)
C802	1-164-159-11	CERAMIC 0.1uF	50V (US, Canadian)

Ref. No.	Part No.	Description	Remarks
		< CONNECTOR >	
CN801	1-558-350-21	CORD (WITH CONNECTOR)	(US, Canadian)
* CN831	1-564-705-11	PIN, CONNECTOR (SMALL TYPE) 3P	(US, Canadian)
		< DIODE >	
D801	8-719-107-94	DIODE 1SS202-1	(US, Canadian)
D802	8-719-107-94	DIODE 1SS202-1	(US, Canadian)
		< RESISTOR >	
R801	1-249-393-11	CARBON 10 5% 1/4W	(US, Canadian)
R802	1-249-429-11	CARBON 10K 5% 1/4W	(US, Canadian)
R803	1-249-429-11	CARBON 10K 5% 1/4W	(US, Canadian)
R804	1-249-405-11	CARBON 100 5% 1/4W	(US, Canadian)
R805	1-249-429-11	CARBON 10K 5% 1/4W	(US, Canadian)
R806	1-249-429-11	CARBON 10K 5% 1/4W	(US, Canadian)
**			
*	A-2006-865-A	CONTROL SW BOARD, COMPLETE	(US, Canadian)
*	A-2006-811-A	CONTROL SW BOARD, COMPLETE	(AEP, E)
		*************************	
		< CAPACITOR >	
C701	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C702	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C703	1-124-584-00	ELECT 100uF 20% 10V	
C704	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C705	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C706	1-161-379-00	CERAMIC 0.01uF 20% 25V	
		< CONNECTOR >	
CN751	1-568-853-11	SOCKET, CONNECTOR 10P	
CN752	1-568-849-11	SOCKET, CONNECTOR 6P	
* CN771	1-564-337-00	PIN, CONNECTOR 3P	
		< CONPOSITION CIRCUIT BLOCK >	
CP701	1-233-140-11	COMPOSITION CIRCUIT BLOCK (100k X 8)	
CP702	1-233-140-11	COMPOSITION CIRCUIT BLOCK (100k X 8)	

CONTROL SW

Ref.No.	Part No.	Description	Remarks
CP703	1-233-140-11	COMPOSITION CIRCUIT BLOCK (100k X 8)	
CP704	1-233-140-11	COMPOSITION CIRCUIT BLOCK (100k X 8)	

< FLUORESCENT INDICATOR >

Ref.No.	Part No.	Description	Remarks
FL701	1-519-672-21	INDICATOR TUBE, FLUORESCENT	

< IC >

Ref.No.	Part No.	Description	Remarks
IC701	8-752-837-19	IC CXP5058H-659Q	
IC702	8-759-995-09	IC MSM6338RS	
IC703	8-752-330-59	IC CXK1011P	
IC704	8-749-922-36	IC GP1U50XB	
IC705	8-759-140-11	IC uPD4011BC (US,Canadian)	

< TRANSISTOR >

Ref.No.	Part No.	Description	Remarks
Q701	8-729-902-11	TRANSISTOR 2SC2021-Q	
Q702	8-729-902-11	TRANSISTOR 2SC2021-Q	
Q703	8-729-902-11	TRANSISTOR 2SC2021-Q	

< RESISTOR >

Ref.No.	Part No.	Description	Remarks
R701	1-249-441-11	CARBON 100K 5% 1/4W	
R702	1-249-441-11	CARBON 100K 5% 1/4W	
R703	1-249-441-11	CARBON 100K 5% 1/4W	
R708	1-249-429-11	CARBON 10K 5% 1/4W	
R709	1-249-422-11	CARBON 2.7K 5% 1/4W	
R710	1-249-424-11	CARBON 3.9K 5% 1/4W	
R711	1-249-427-11	CARBON 6.8K 5% 1/4W	
R712	1-249-432-11	CARBON 18K 5% 1/4W	
R713	1-249-429-11	CARBON 10K 5% 1/4W	
R714	1-249-422-11	CARBON 2.7K 5% 1/4W	
R715	1-249-424-11	CARBON 3.9K 5% 1/4W	
R716	1-249-429-11	CARBON 10K 5% 1/4W	
R717	1-249-422-11	CARBON 2.7K 5% 1/4W	
R718	1-249-424-11	CARBON 3.9K 5% 1/4W	
R719	1-249-427-11	CARBON 6.8K 5% 1/4W	
R720	1-249-432-11	CARBON 18K 5% 1/4W	
R721	1-249-429-11	CARBON 10K 5% 1/4W	
R722	1-249-422-11	CARBON 2.7K 5% 1/4W	
R723	1-249-424-11	CARBON 3.9K 5% 1/4W	
R724	1-249-427-11	CARBON 6.8K 5% 1/4W	
R725	1-249-432-11	CARBON 18K 5% 1/4W	
R726	1-249-429-11	CARBON 10K 5% 1/4W	
R727	1-249-422-11	CARBON 2.7K 5% 1/4W	
R728	1-249-424-11	CARBON 3.9K 5% 1/4W	
R729	1-249-427-11	CARBON 6.8K 5% 1/4W	
R730	1-249-432-11	CARBON 18K 5% 1/4W	
R731	1-249-429-11	CARBON 10K 5% 1/4W	
R732	1-249-422-11	CARBON 2.7K 5% 1/4W	
R733	1-249-424-11	CARBON 3.9K 5% 1/4W	
R734	1-249-429-11	CARBON 10K 5% 1/4W	
R735	1-249-422-11	CARBON 2.7K 5% 1/4W	
R736	1-249-424-11	CARBON 3.9K 5% 1/4W	
R737	1-249-427-11	CARBON 6.8K 5% 1/4W	
R738	1-249-432-11	CARBON 18K 5% 1/4W	
R739	1-249-429-11	CARBON 10K 5% 1/4W	
R740	1-249-422-11	CARBON 2.7K 5% 1/4W	
R741	1-249-424-11	CARBON 3.9K 5% 1/4W	
R742	1-249-427-11	CARBON 6.8K 5% 1/4W	
R743	1-249-432-11	CARBON 18K 5% 1/4W	
R744	1-249-437-11	CARBON 47K 5% 1/4W	
R745	1-249-437-11	CARBON 47K 5% 1/4W	
R746	1-249-437-11	CARBON 47K 5% 1/4W	
R747	1-249-437-11	CARBON 47K 5% 1/4W	
R748	1-249-437-11	CARBON 47K 5% 1/4W	
R749	1-249-437-11	CARBON 47K 5% 1/4W	
R750	1-249-437-11	CARBON 47K 5% 1/4W	
R751	1-249-437-11	CARBON 47K 5% 1/4W	
R752	1-249-437-11	CARBON 47K 5% 1/4W	
R753	1-249-437-11	CARBON 47K 5% 1/4W	
R754	1-249-437-11	CARBON 47K 5% 1/4W	
R755	1-249-437-11	CARBON 47K 5% 1/4W	
R756	1-249-437-11	CARBON 47K 5% 1/4W	(AEP,E)
R757	1-249-437-11	CARBON 47K 5% 1/4W	(US,Canadian)
R758	1-249-409-11	CARBON 220 5% 1/4W	

< SWITCH >

Ref.No.	Part No.	Description	Remarks
S704	1-554-937-11	SWITCH, KEY BOARD (MODE)	
S705	1-570-974-11	SWITCH, SLIDE (REC MODE)	
S706	1-554-937-11	SWITCH, KEY BOARD (1)	
S707	1-554-937-11	SWITCH, KEY BOARD (2)	
S708	1-554-937-11	SWITCH, KEY BOARD (3)	
S709	1-554-937-11	SWITCH, KEY BOARD (4)	
S710	1-554-937-11	SWITCH, KEY BOARD (5)	
S711	1-554-937-11	SWITCH, KEY BOARD (6)	
S712	1-554-937-11	SWITCH, KEY BOARD (7)	
S713	1-554-937-11	SWITCH, KEY BOARD (8)	
S714	1-554-937-11	SWITCH, KEY BOARD (9)	
S715	1-554-937-11	SWITCH, KEY BOARD (0)	
S716	1-554-937-11	SWITCH, KEY BOARD (FADER)	
S717	1-554-937-11	SWITCH, KEY BOARD (MUSIC SCAN)	
S718	1-554-937-11	SWITCH, KEY BOARD (MARGIN RESET)	
S719	1-554-937-11	SWITCH, KEY BOARD (CLEAR)	
S720	1-554-937-11	SWITCH, KEY BOARD (DATE RECORDED)	
S721	1-554-937-11	SWITCH, KEY BOARD (DATE PRESENT)	
S722	1-554-937-11	SWITCH, KEY BOARD (DATE CLOCK SET)	
S723	1-554-937-11	SWITCH, KEY BOARD (AUTO)	
S724	1-554-937-11	SWITCH, KEY BOARD (RENUMBER)	
S725	1-554-937-11	SWITCH, KEY BOARD (WRITE START ID)	
S726	1-554-937-11	SWITCH, KEY BOARD (WRITE SKIP ID)	
S727	1-554-937-11	SWITCH, KEY BOARD (WRITE END ID)	
S728	1-554-937-11	SWITCH, KEY BOARD (ERASE START ID)	

When indicating parts by reference number, please include the board name.

CONTROL SW | DRUM DRIVE

Ref. No.	Part No.	Description	Remarks
S729	1-554-937-11	SWITCH, KEY BOARD (ERASE SKIP ID)	
S730	1-554-937-11	SWITCH, KEY BOARD (ERASE END ID)	
S731	1-554-937-11	SWITCH, KEY BOARD (■)	
S732	1-554-937-11	SWITCH, KEY BOARD (▶)	
S733	1-554-937-11	SWITCH, KEY BOARD (AMS ⏮)	
S734	1-554-937-11	SWITCH, KEY BOARD (AMS ⏭)	
S735	1-554-937-11	SWITCH, KEY BOARD (◀◀)	
S736	1-554-937-11	SWITCH, KEY BOARD (▶▶)	
S737	1-554-937-11	SWITCH, KEY BOARD (● REC)	
S738	1-554-937-11	SWITCH, KEY BOARD (❚❚ PAUSE)	
S739	1-554-937-11	SWITCH, KEY BOARD (○ REC MUTE)	
		< VIBRATOR >	
X701	1-577-359-21	VIBRATOR, CERAMIC (4.19MHz)	

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Ref. No.	Part No.	Description	Remarks
*	A-2056-488-A	DRUM DRIVE BOARD, COMPLETE **************************	
*	3-343-491-01	HOLDER (S SENSOR B)	
	4-870-539-00	PLATE, GROUND	
		< CAPACITOR >	
C01	1-126-176-11	ELECT 220uF 20% 10V	
C02	1-126-157-11	ELECT 10uF 20% 16V	
C03	1-124-257-00	ELECT 2.2uF 20% 50V	
C04	1-164-161-11	CERAMIC CHIP 0.0022uF 10% 100V	
C05	1-164-161-11	CERAMIC CHIP 0.0022uF 10% 100V	
C08	1-163-001-11	CERAMIC CHIP 220PF 10% 50V	
C21	1-163-001-11	CERAMIC CHIP 220PF 10% 50V	
C31	1-163-001-11	CERAMIC CHIP 220PF 10% 50V	
		< CONNECTOR >	
* CN01	1-564-704-11	PIN, CONNECTOR (SMALL TYPE) 2P	
* CN02	1-564-704-11	PIN, CONNECTOR (SMALL TYPE) 2P	
* CN03	1-564-338-00	PIN, CONNECTOR 4P	
* CN04	1-564-336-00	PIN, CONNECTOR 2P	
* CN05	1-564-336-61	PIN, CONNECTOR 2P	
* CN06	1-564-339-00	PIN, CONNECTOR 5P	
CN07	1-564-721-11	PIN, CONNECTOR (SMALL TYPE) 5P	
* CN08	1-568-872-11	SOCKET, CONNECTOR 30P	
* CN09	1-564-706-11	PIN, CONNECTOR (SMALL TYPE) 4P	
* CN10	1-564-719-11	PIN, CONNECTOR (SMALL TYPE) 3P	
		< IC >	
IC01	8-759-107-68	IC CX20115A	
IC02	8-759-502-80	IC LM358M	
IC03	8-759-502-80	IC LM358M	
		< JUMPER RESISTOR >	
JW06	1-216-296-00	METAL CHIP 0 5% 1/8W	
JW07	1-216-296-00	METAL CHIP 0 5% 1/8W	
JW08	1-216-296-00	METAL CHIP 0 5% 1/8W	
JW09	1-216-296-00	METAL CHIP 0 5% 1/8W	
JW10	1-216-296-00	METAL CHIP 0 5% 1/8W	
JW11	1-216-296-00	METAL CHIP 0 5% 1/8W	
JW12	1-216-296-00	METAL CHIP 0 5% 1/8W	
JW13	1-216-296-00	METAL CHIP 0 5% 1/8W	
JW14	1-216-296-00	METAL CHIP 0 5% 1/8W	
JW15	1-216-296-00	METAL CHIP 0 5% 1/8W	
JW16	1-216-296-00	METAL CHIP 0 5% 1/8W	
JW17	1-216-296-00	METAL CHIP 0 5% 1/8W	
JW18	1-216-296-00	METAL CHIP 0 5% 1/8W	
JW19	1-216-296-00	METAL CHIP 0 5% 1/8W	
JW20	1-216-296-00	METAL CHIP 0 5% 1/8W	
JW21	1-216-296-00	METAL CHIP 0 5% 1/8W	
JW22	1-216-296-00	METAL CHIP 0 5% 1/8W	
JW23	1-216-296-00	METAL CHIP 0 5% 1/8W	
JW24	1-216-296-00	METAL CHIP 0 5% 1/8W	
JW25	1-216-296-00	METAL CHIP 0 5% 1/8W	
JW26	1-216-296-00	METAL CHIP 0 5% 1/8W	
JW27	1-216-296-00	METAL CHIP 0 5% 1/8W	
JW28	1-216-296-00	METAL CHIP 0 5% 1/8W	
JW29	1-216-296-00	METAL CHIP 0 5% 1/8W	
JW30	1-216-296-00	METAL CHIP 0 5% 1/8W	
		< PHOTO INTERUPTER >	
PH01	8-719-939-23	DIODE GP2S09-C	
PH02	8-719-939-23	DIODE GP2S09-C	
		< TRANSISTOR >	
Q01	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q02	8-729-101-07	TRANSISTOR 2SB798-DL	
		< RESISTOR >	
R01	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R02	1-216-075-00	METAL CHIP 12K 5% 1/10W	
R03	1-216-029-00	METAL CHIP 150 5% 1/10W	
R04	1-216-059-00	METAL CHIP 2.7K 5% 1/10W	
R05	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R06	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R07	1-216-025-00	METAL CHIP 100 5% 1/10W	
R08	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R09	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R10	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R11	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R12	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R13	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R14	1-216-037-00	METAL CHIP 330 5% 1/10W	
R21	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R22	1-216-081-00	METAL CHIP 22K 5% 1/10W	

When indicating parts by reference number, please include the board name.

Ref. No.	Part No.	Description	Remarks
R23	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R24	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	
R25	1-216-103-00	METAL CHIP 180K 5% 1/10W	
R26	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R31	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R32	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R35	1-216-103-00	METAL CHIP 180K 5% 1/10W	
R36	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	

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Ref. No.	Part No.	Description	Remarks
*	1-645-244-11	HEADPHONE JACK BOARD ********************	
		< CAPACITOR >	
C180	1-162-290-31	CERAMIC 470PF 10% 50V	
C280	1-162-290-31	CERAMIC 470PF 10% 50V	
C451	1-126-024-21	ELECT 220uF 20% 25V	
C452	1-126-024-21	ELECT 220uF 20% 25V	
		< IC >	
IC401	8-759-634-50	IC M5218AL	
		< JACK >	
J161	1-565-327-11	JACK, LARGE TYPE 1P (PHONES)	
		< COIL >	
L180	1-236-163-11	ENCAPSULATED COMPONENT	
L280	1-236-163-11	ENCAPSULATED COMPONENT	
		< RESISTOR >	
R128	1-259-468-11	CARBON 47K 5% 1/6W	
R129	1-259-444-11	CARBON 4.7K 5% 1/6W	
R130	1-259-468-11	CARBON 47K 5% 1/6W	
R131	1-259-412-11	CARBON 220 5% 1/6W	
R228	1-259-468-11	CARBON 47K 5% 1/6W	
R229	1-259-444-11	CARBON 4.7K 5% 1/6W	
R230	1-259-468-11	CARBON 47K 5% 1/6W	
R231	1-259-412-11	CARBON 220 5% 1/6W	

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Ref. No.	Part No.	Description	Remarks
*	1-645-245-11	HEADPHONE VOL BOARD *******************	
		< VARIABLE RESISTOR >	
RV102	1-241-537-11	RES, VAR, CARBON 20K/20K (LEVEL)	

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Ref. No.	Part No.	Description	Remarks
*	1-645-240-11	INPUT SW BOARD **************	
		< CONNECTOR >	
* CN772	1-564-336-00	PIN, CONNECTOR 2P	
		< RESISTOR >	
R706	1-249-427-11	CARBON 6.8K 5% 1/4W	
R707	1-249-432-11	CARBON 18K 5% 1/4W	
		< SWITCH >	
S703	1-572-758-11	SWITCH, ROTARY (INPUT)	

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Ref. No.	Part No.	Description	Remarks
*	1-645-241-11	LED BOARD *********	
		< DIODE >	
D701	8-719-421-98	DIODE LN01401C(Q)-3-LF	
D702	8-719-421-98	DIODE LN01401C(Q)-3-LF	

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Ref. No.	Part No.	Description	Remarks
*	A-2006-866-A	MAIN BOARD, COMPLETE (US, Canadian, E)	
*	A-2006-863-A	MAIN BOARD, COMPLETE (AEP) ********************	
		< CAPACITOR >	
C102	1-126-233-11	ELECT 22uF 20% 50V	
C103	1-136-153-00	FILM 0.01uF 5% 50V	
C104	1-126-059-11	ELECT 10uF 20% 63V	
C106	1-136-153-00	FILM 0.01uF 5% 50V	
C110	1-136-275-91	FILM 390PF 5% 630V	
C112	1-136-437-11	FILM 220PF 5% 630V	
C113	1-136-437-11	FILM 220PF 5% 630V	
C114	1-136-433-11	FILM 100PF 5% 630V	
C115	1-136-433-11	FILM 100PF 5% 630V	
C116	1-130-475-00	MYLAR 0.0022uF 5% 50V	
C117	1-130-471-00	MYLAR 0.001uF 5% 50V	
C118	1-130-478-00	MYLAR 0.0039uF 5% 50V	
C120	1-126-023-11	ELECT 100uF 20% 25V	
C202	1-126-233-11	ELECT 22uF 20% 50V	
C203	1-136-153-00	FILM 0.01uF 5% 50V	
C206	1-136-153-00	FILM 0.01uF 5% 50V	
C210	1-136-275-91	FILM 390PF 5% 630V	
C212	1-136-437-11	FILM 220PF 5% 630V	
C213	1-136-437-11	FILM 220PF 5% 630V	
C214	1-136-433-11	FILM 100PF 5% 630V	
C215	1-136-433-11	FILM 100PF 5% 630V	
C216	1-130-475-00	MYLAR 0.0022uF 5% 50V	
C217	1-130-471-00	MYLAR 0.001uF 5% 50V	

When indicating parts by reference number, please include the board name.

MAIN

Ref. No.	Part No.	Description			Remarks
C218	1-130-478-00	MYLAR	0.0039uF	5%	50V
C220	1-126-023-11	ELECT	100uF	20%	25V
C300	1-162-294-31	CERAMIC	0.001uF	10%	50V
C301	1-130-834-00	FILM	1uF	10%	63V
C302	1-164-159-11	CERAMIC	0.1uF		50V
C303	1-162-211-31	CERAMIC	33PF	5%	50V
C304	1-126-059-11	ELECT	10uF	20%	63V
C305	1-136-153-00	FILM	0.01uF	5%	50V
C306	1-164-159-11	CERAMIC	0.1uF		50V
C307	1-126-022-11	ELECT	47uF	20%	10V
C308	1-164-159-11	CERAMIC	0.1uF		50V
C309	1-124-983-11	ELECT	330uF	20%	6.3V
C310	1-130-834-00	FILM	1uF	10%	63V
C311	1-162-279-31	CERAMIC	75PF	10%	50V
C312	1-126-022-11	ELECT	47uF	20%	10V
C313	1-126-023-11	ELECT	100uF	20%	25V
C314	1-162-199-31	CERAMIC	10PF	5%	50V
C315	1-162-294-31	CERAMIC	0.001uF	10%	50V
C316	1-162-199-31	CERAMIC	10PF	5%	50V
C317	1-162-201-31	CERAMIC	12PF	5%	50V
C318	1-162-201-31	CERAMIC	12PF	5%	50V
C319	1-164-159-11	CERAMIC	0.1uF		50V
C320	1-130-834-00	FILM	1uF	10%	63V
C321	1-136-165-00	FILM	0.1uF	5%	50V
C322	1-164-159-11	CERAMIC	0.1uF		50V
C323	1-162-206-31	CERAMIC	20PF	5%	50V
C324	1-164-159-11	CERAMIC	0.1uF		50V
C325	1-126-022-11	ELECT	47uF	20%	10V
C326	1-162-201-31	CERAMIC	12PF	5%	50V
C327	1-162-201-31	CERAMIC	12PF	5%	50V
C328	1-124-903-11	ELECT	1uF	20%	50V
C329	1-162-294-31	CERAMIC	0.001uF	10%	50V
C330	1-162-294-31	CERAMIC	0.001uF	10%	50V
C331	1-162-294-31	CERAMIC	0.001uF	10%	50V
C332	1-162-293-31	CERAMIC	820PF	10%	50V
C333	1-162-283-31	CERAMIC	120PF	10%	50V
C334	1-161-375-00	CERAMIC	0.0022uF	20%	50V
C335	1-161-375-00	CERAMIC	0.0022uF	20%	50V
C336	1-162-289-31	CERAMIC	390PF	10%	50V
C337	1-161-329-00	CERAMIC	0.0068uF	30%	16V
C338	1-162-306-11	CERAMIC	0.01uF	20%	16V
C339	1-162-306-11	CERAMIC	0.01uF	20%	16V
C340	1-162-290-31	CERAMIC	470PF	10%	50V
C341	1-162-306-11	CERAMIC	0.01uF	20%	16V
C342	1-126-059-11	ELECT	10uF	20%	63V
C343	1-162-306-11	CERAMIC	0.01uF	20%	16V
C344	1-162-306-11	CERAMIC	0.01uF	20%	16V
C345	1-162-209-31	CERAMIC	27PF	5%	50V
C346	1-162-205-31	CERAMIC	18PF	5%	50V
C347	1-162-294-31	CERAMIC	0.001uF	10%	50V

Ref. No.	Part No.	Description			Remarks
C348	1-126-059-11	ELECT	10uF	20%	63V
C362	1-126-043-11	ELECT	0.47uF	20%	50V
C363	1-126-059-11	ELECT	10uF	20%	63V
C401	1-136-165-00	FILM	0.1uF	5%	50V
C402	1-136-165-00	FILM	0.1uF	5%	50V
C405	1-136-165-00	FILM	0.1uF	5%	50V
C406	1-126-059-11	ELECT	10uF	20%	63V
C407	1-136-165-00	FILM	0.1uF	5%	50V
C408	1-136-165-00	FILM	0.1uF	5%	50V
C409	1-126-104-11	ELECT	470uF	20%	35V
C410	1-136-165-00	FILM	0.1uF	5%	50V
C411	1-126-104-11	ELECT	470uF	20%	35V
C412	1-136-165-00	FILM	0.1uF	5%	50V
C413	1-126-104-11	ELECT	470uF	20%	35V
C414	1-126-104-11	ELECT	470uF	20%	35V
C415	1-164-159-11	CERAMIC	0.1uF		50V
C417	1-164-159-11	CERAMIC	0.1uF		50V
C426	1-136-165-00	FILM	0.1uF	5%	50V
C427	1-136-165-00	FILM	0.1uF	5%	50V
C428	1-136-165-00	FILM	0.1uF	5%	50V
C429	1-136-165-00	FILM	0.1uF	5%	50V
C430	1-126-059-11	ELECT	10uF	20%	63V
C431	1-126-059-11	ELECT	10uF	20%	63V
C432	1-124-273-00	ELECT	3.3uF	20%	50V
C438	1-124-983-11	ELECT	330uF	20%	6.3V
C439	1-164-159-11	CERAMIC	0.1uF		50V
C440	1-126-916-11	ELECT	1000uF	20%	6.3V
C441	1-164-159-11	CERAMIC	0.1uF		50V
C442	1-164-159-11	CERAMIC	0.1uF		50V
C444	1-164-159-11	CERAMIC	0.1uF		50V
C445	1-164-159-11	CERAMIC	0.1uF		50V
C446	1-164-159-11	CERAMIC	0.1uF		50V
C447	1-164-159-11	CERAMIC	0.1uF		50V
C448	1-164-159-11	CERAMIC	0.1uF		50V
C449	1-164-159-11	CERAMIC	0.1uF		50V
C450	1-136-165-00	FILM	0.1uF	5%	50V
C451	1-136-165-00	FILM	0.1uF	5%	50V
C460	1-164-159-11	CERAMIC	0.1uF		50V
C461	1-164-159-11	CERAMIC	0.1uF		50V
C462	1-164-159-11	CERAMIC	0.1uF		50V
C470	1-164-159-11	CERAMIC	0.1uF		50V
C471	1-164-159-11	CERAMIC	0.1uF		50V
C472	1-164-159-11	CERAMIC	0.1uF		50V
C473	1-164-159-11	CERAMIC	0.1uF		50V
C499	1-162-290-31	CERAMIC	470PF	10%	50V
C501	1-136-165-00	FILM	0.1uF	5%	50V
C503	1-162-199-31	CERAMIC	10PF	5%	50V
C504	1-126-023-11	ELECT	100uF	20%	25V
C505	1-162-211-31	CERAMIC	33PF	5%	50V
C506	1-162-199-31	CERAMIC	10PF	5%	50V

When indicating parts by reference number, please include the board name.

MAIN

Ref.No.	Part No.	Description				Remarks
C507	1-136-153-00	FILM	0.01uF	5%	50V	
C508	1-136-158-00	FILM	0.027uF	5%	50V	
C509	1-126-023-11	ELECT	100uF	20%	25V	
C511	1-136-165-00	FILM	0.1uF	5%	50V	
C512	1-164-159-11	CERAMIC	0.1uF		50V	
C513	1-126-023-11	ELECT	100uF	20%	25V	
C514	1-136-165-00	FILM	0.1uF	5%	50V	
C515	1-136-169-00	FILM	0.22uF	5%	50V	
C516	1-136-158-00	FILM	0.027uF	5%	50V	
C517	1-164-159-11	CERAMIC	0.1uF		50V	
C555	1-162-179-11	CERAMIC	0.1uF		50V	
C601	1-126-023-11	ELECT	100uF	20%	25V	
C602	1-126-023-11	ELECT	100uF	20%	25V	
C603	1-126-023-11	ELECT	100uF	20%	25V	
C604	1-126-023-11	ELECT	100uF	20%	25V	
C605	1-126-023-11	ELECT	100uF	20%	25V	
C606	1-126-023-11	ELECT	100uF	20%	25V	
C607	1-126-023-11	ELECT	100uF	20%	25V	
C608	1-126-023-11	ELECT	100uF	20%	25V	
C609	1-126-023-11	ELECT	100uF	20%	25V	
C610	1-136-165-00	FILM	0.1uF	5%	50V	
C612	1-136-165-00	FILM	0.1uF	5%	50V	
C613	1-136-165-00	FILM	0.1uF	5%	50V	
C614	1-136-165-00	FILM	0.1uF	5%	50V	
C615	1-162-179-11	CERAMIC	0.1uF		50V	
C616	1-136-165-00	FILM	0.1uF	5%	50V	
C617	1-136-165-00	FILM	0.1uF	5%	50V	
C618	1-136-165-00	FILM	0.1uF	5%	50V	
C619	1-162-179-11	CERAMIC	0.1uF		50V	
C620	1-162-179-11	CERAMIC	0.1uF		50V	
C621	1-136-165-00	FILM	0.1uF	5%	50V	
C622	1-136-165-00	FILM	0.1uF	5%	50V	
C623	1-136-165-00	FILM	0.1uF	5%	50V	
C624	1-126-023-11	ELECT	100uF	20%	25V	
C630	1-164-159-11	CERAMIC	0.1uF		50V	
C631	1-164-159-11	CERAMIC	0.1uF		50V	
C632	1-164-159-11	CERAMIC	0.1uF		50V	
C633	1-164-159-11	CERAMIC	0.1uF		50V	
C634	1-164-159-11	CERAMIC	0.1uF		50V	
C635	1-162-179-11	CERAMIC	0.1uF		25V	
C636	1-164-159-11	CERAMIC	0.1uF		50V	
C637	1-164-159-11	CERAMIC	0.1uF		50V	
C638	1-164-159-11	CERAMIC	0.1uF		50V	
C639	1-164-159-11	CERAMIC	0.1uF		50V	
C640	1-164-159-11	CERAMIC	0.1uF		50V	
C641	1-126-023-11	ELECT	100uF	20%	25V	

< CONNECTOR >

Ref.No.	Part No.	Description	Remarks
CN104	1-564-507-11	PLUG, CONNECTOR 4P	
* CN107	1-564-509-11	PLUG, CONNECTOR 6P	
* CN301	1-564-706-11	PIN, CONNECTOR (SMALL TYPE) 4P	
* CN308	1-564-339-00	PIN, CONNECTOR 5P	
* CN333	1-564-514-11	PLUG, CONNECTOR 11P	
* CN398	1-564-336-00	PIN, CONNECTOR 2P	
* CN501	1-564-716-11	PIN, CONNECTOR (SMALL TYPE)14P	
* CN508	1-568-933-11	SOCKET, CONNECTOR 30P	
* CN571	1-568-829-11	SOCKET, CONNECTOR 10P	
* CN572	1-568-825-11	SOCKET, CONNECTOR 6P	
* CN576	1-564-336-00	PIN, CONNECTOR 2P	

< CONPOSITION CIRCUIT BLOCK >

Ref.No.	Part No.	Description	Remarks
CP601	1-233-006-11	COMPOSITION CIRCUIT BLOCK (100K X 10)	

< DIODE >

Ref.No.	Part No.	Description		Remarks
D101	8-719-107-94	DIODE	1SS202-1	
D102	8-719-107-94	DIODE	1SS202-1	
D201	8-719-107-94	DIODE	1SS202-1	
D202	8-719-107-94	DIODE	1SS202-1	
D306	8-719-200-82	DIODE	11ES2	
D307	8-719-107-94	DIODE	1SS202-1	
D308	8-719-107-94	DIODE	1SS202-1	
D314	8-719-200-82	DIODE	11ES2	
D321	8-719-107-94	DIODE	1SS202-1	
D322	8-719-911-06	DIODE	1SS106	
D324	8-719-911-06	DIODE	1SS106	
D350	8-719-107-94	DIODE	1SS202-1	
D403	8-719-107-94	DIODE	1SS202-1	
D501	8-719-918-45	DIODE	KV1310	
D503	8-719-903-27	DIODE	1SS168	
D601	8-719-114-27	DIODE	RD4.7JS-B3	
D602	8-719-107-94	DIODE	1SS202-1	
D603	8-719-114-30	DIODE	RD5.1JS-B2	

< IC >

Ref.No.	Part No.	Description		Remarks
IC101	8-759-602-83	IC	M5238P	
IC201	8-759-602-83	IC	M5238P	
IC301	8-759-917-18	IC	SN74HCU04AN	
IC302	8-759-916-12	IC	SN74HC00AN	
IC303	8-759-921-10	IC	SN74HC86AN	
IC304	8-759-135-80	IC	uPC358C	
IC305	8-759-927-46	IC	SN74HC00ANS	
IC306	8-759-947-57	IC	CXD1136Q	
IC307	8-752-339-43	IC	CXD2601AQ	
IC308	8-759-906-24	IC	SN74LS624N	
IC309	8-759-925-90	IC	SN74HC74ANS	
IC310	8-752-337-80	IC	CXK58257AM-12L	
IC311	8-752-837-18	IC	CXP80524-063Q	
IC312	8-752-837-17	IC	CXP80524-062Q	
IC316	8-759-912-77	IC	LM324N	

When indicating parts by reference number, please include the board name.

MAIN

Ref. No.	Part No.	Description	Remarks
IC318	8-759-135-80	IC uPC358C	
IC319	8-759-633-65	IC M54641L	
IC320	8-759-633-65	IC M54641L	
IC321	8-759-520-90	IC PST572E	
IC322	8-759-231-53	IC TA7805S	
IC330	8-759-984-34	IC RP5C62	
IC331	8-749-921-11	IC GP1F32R (OPTICAL IN)	
IC332	8-749-921-12	IC GP1F32T (OPTICAL OUT)	
IC333	8-759-917-18	IC SN74HCU04AN	
IC354	8-759-900-72	IC NE5532P	
IC355	8-759-900-72	IC NE5532P	
IC356	8-759-945-58	IC RC4558P	
IC357	8-759-231-53	IC TA7805S	
IC358	8-759-245-79	IC TA79005S	
IC359	8-759-504-36	IC CS5339-KP	
IC360	8-759-972-47	IC LF412CN	
IC363	8-752-342-65	IC CXD2560M	
IC375	8-759-900-72	IC NE5532P	
IC376	8-759-900-72	IC NE5532P	
IC431	8-759-925-78	IC SN74HC10ANS	
IC432	8-759-510-43	IC PST572C	
IC501	8-759-604-30	IC M5F7808L	
IC502	8-759-925-74	IC SN74HC04ANS	
IC503	8-759-926-95	IC SN74HC4020ANS	
IC504	8-759-250-81	IC TC5081AP	
IC601	8-759-044-10	IC CXD2562Q	
IC602	8-759-900-72	IC NE5532P	

< JACK >

Ref. No.	Part No.	Description	Remarks
J101	1-568-751-61	JACK, PIN (2P SHIELD TYPE)(LINE IN)	
J102	1-568-751-61	JACK, PIN (2P SHIELD TYPE)(LINE OUT)	
J181	1-565-406-41	JACK, PIN 1P (COAXIAL OUT)	
J191	1-568-750-21	JACK, PIN (1P SHIELD TYPE) (COAXIAL IN)	

< COIL >

Ref. No.	Part No.	Description	Remarks
L301	1-410-509-11	INDUCTOR 10uH	
L302	1-410-498-11	INDUCTOR 1.2uH	
L303	1-410-509-11	INDUCTOR 10uH	
L305	1-410-515-11	INDUCTOR 33uH	
L306	1-410-509-11	INDUCTOR 10uH	
L310	1-410-953-11	INDUCTOR, SMALL TYPE	
L320	1-236-101-11	ENCAPSULATED COMPONENT	
L329	1-236-101-11	ENCAPSULATED COMPONENT	
L501	1-426-850-11	COIL (RF)	
L502	1-410-509-11	INDUCTOR 10uH	
L504	1-410-509-11	INDUCTOR 10uH	
L505	1-426-850-11	COIL (RF)	
L602	1-239-235-21	ENCAPSULATED COMPONENT	
L603	1-410-397-21	FERRITE BEAD INDUCTOR	
L604	1-236-058-21	ENCAPSULATED COMPONENT	

< TRANSISTOR >

Ref. No.	Part No.	Description	Remarks
Q301	8-729-927-11	TRANSISTOR 2SA1585S-QR	
Q302	8-729-801-93	TRANSISTOR 2SD1387-3	
Q311	8-729-900-80	TRANSISTOR DTC114ES	
Q312	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q313	8-729-900-61	TRANSISTOR DTA114ES	
Q318	8-729-900-80	TRANSISTOR DTC114ES	
Q319	8-729-900-80	TRANSISTOR DTC114ES	
Q320	8-729-927-11	TRANSISTOR 2SA1585S-QR	
Q321	8-729-927-12	TRANSISTOR 2SC4115S-QR	
Q333	8-729-141-83	TRANSISTOR 2SB1094-LK	
Q334	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q335	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q336	8-729-927-11	TRANSISTOR 2SA1585S-QR	
Q337	8-729-927-11	TRANSISTOR 2SA1585S-QR	
Q338	8-729-927-12	TRANSISTOR 2SC4115S-QR	
Q339	8-729-927-12	TRANSISTOR 2SC4115S-QR	
Q340	8-729-900-80	TRANSISTOR DTC114ES	
Q341	8-729-900-80	TRANSISTOR DTC114ES	
Q342	8-729-209-15	TRANSISTOR 2SD2012	
Q432	8-729-900-80	TRANSISTOR DTC114ES	
Q433	8-729-107-85	TRANSISTOR 2SC3623A-K	
Q434	8-729-107-85	TRANSISTOR 2SC3623A-K	
Q435	8-729-900-61	TRANSISTOR DTA114ES	
Q436	8-729-900-80	TRANSISTOR DTC114ES	
Q437	8-729-900-61	TRANSISTOR DTA114ES	
Q438	8-729-900-80	TRANSISTOR DTC114ES	
Q439	8-729-900-80	TRANSISTOR DTC114ES	
Q440	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q499	8-729-900-80	TRANSISTOR DTC114ES	
Q501	8-729-200-56	TRANSISTOR 2SK241-GR	
Q502	8-729-200-56	TRANSISTOR 2SK241-GR	
Q503	8-729-900-61	TRANSISTOR DTA114ES	
Q601	8-729-140-96	TRANSISTOR 2SD774-34	
Q602	8-729-140-96	TRANSISTOR 2SD774-34	
Q603	8-729-119-76	TRANSISTOR 2SA1175-HFE	

< RESISTOR >

Ref. No.	Part No.	Description	Remarks
R102	1-247-903-00	CARBON 1M 5% 1/4W	
R103	1-249-421-11	CARBON 2.2K 5% 1/4W	
R104	1-249-434-11	CARBON 27K 5% 1/4W	
R105	1-249-435-11	CARBON 33K 5% 1/4W	
R106	1-249-403-11	CARBON 68 5% 1/4W	
R107	1-247-854-11	CARBON 9.1K 5% 1/4W	
R108	1-247-854-11	CARBON 9.1K 5% 1/4W	
R109	1-247-854-11	CARBON 9.1K 5% 1/4W	
R110	1-247-854-11	CARBON 9.1K 5% 1/4W	
R111	1-247-844-11	CARBON 3.6K 5% 1/4W	
R112	1-247-844-11	CARBON 3.6K 5% 1/4W	

When indicating parts by reference number, please include the board name.

Ref.No.	Part No.	Description				Remarks
R115	1-249-429-11	CARBON	10K	5%	1/4W	
R116	1-249-429-11	CARBON	10K	5%	1/4W	
R117	1-249-426-11	CARBON	5.6K	5%	1/4W	
R118	1-249-426-11	CARBON	5.6K	5%	1/4W	
R119	1-249-426-11	CARBON	5.6K	5%	1/4W	
R120	1-249-426-11	CARBON	5.6K	5%	1/4W	
R122	1-247-836-11	CARBON	1.6K	5%	1/4W	
R123	1-247-836-11	CARBON	1.6K	5%	1/4W	
R124	1-249-441-11	CARBON	100K	5%	1/4W	
R125	1-249-409-11	CARBON	220	5%	1/4W	
R126	1-249-429-11	CARBON	10K	5%	1/4W	
R127	1-249-405-11	CARBON	100	5%	1/4W	
R153	1-247-806-11	CARBON	91	5%	1/4W	
R180	1-249-397-11	CARBON	22	5%	1/4W	
R202	1-247-903-00	CARBON	1M	5%	1/4W	
R203	1-249-421-11	CARBON	2.2K	5%	1/4W	
R204	1-249-434-11	CARBON	27K	5%	1/4W	
R205	1-249-435-11	CARBON	33K	5%	1/4W	
R206	1-249-403-11	CARBON	68	5%	1/4W	
R207	1-247-854-11	CARBON	9.1K	5%	1/4W	
R208	1-247-854-11	CARBON	9.1K	5%	1/4W	
R209	1-247-854-11	CARBON	9.1K	5%	1/4W	
R210	1-247-854-11	CARBON	9.1K	5%	1/4W	
R211	1-247-844-11	CARBON	3.6K	5%	1/4W	
R212	1-247-844-11	CARBON	3.6K	5%	1/4W	
R215	1-249-429-11	CARBON	10K	5%	1/4W	
R216	1-249-429-11	CARBON	10K	5%	1/4W	
R217	1-249-426-11	CARBON	5.6K	5%	1/4W	
R218	1-249-426-11	CARBON	5.6K	5%	1/4W	
R219	1-249-426-11	CARBON	5.6K	5%	1/4W	
R220	1-249-426-11	CARBON	5.6K	5%	1/4W	
R222	1-247-836-11	CARBON	1.6K	5%	1/4W	
R223	1-247-836-11	CARBON	1.6K	5%	1/4W	
R224	1-249-441-11	CARBON	100K	5%	1/4W	
R225	1-249-409-11	CARBON	220	5%	1/4W	
R226	1-249-429-11	CARBON	10K	5%	1/4W	
R227	1-249-405-11	CARBON	100	5%	1/4W	
R253	1-247-806-11	CARBON	91	5%	1/4W	
R280	1-249-397-11	CARBON	22	5%	1/4W	
R301	1-247-804-11	CARBON	75	5%	1/4W	
R302	1-249-437-11	CARBON	47K	5%	1/4W	
R303	1-249-421-11	CARBON	2.2K	5%	1/4W	
R304	1-249-441-11	CARBON	100K	5%	1/4W	
R305	1-249-421-11	CARBON	2.2K	5%	1/4W	
R306	1-249-417-11	CARBON	1K	5%	1/4W	
R307	1-249-417-11	CARBON	1K	5%	1/4W	
R308	1-249-425-11	CARBON	4.7K	5%	1/4W	
R309	1-249-421-11	CARBON	2.2K	5%	1/4W	
R310	1-249-441-11	CARBON	100K	5%	1/4W	
R311	1-249-429-11	CARBON	10K	5%	1/4W	
R312	1-249-421-11	CARBON	2.2K	5%	1/4W	
R313	1-249-421-11	CARBON	2.2K	5%	1/4W	
R314	1-249-435-11	CARBON	33K	5%	1/4W	
R315	1-249-429-11	CARBON	10K	5%	1/4W	
R316	1-247-804-11	CARBON	75	5%	1/4W	
R317	1-249-405-11	CARBON	100	5%	1/4W	
R318	1-249-409-11	CARBON	220	5%	1/4W	
R319	1-249-409-11	CARBON	220	5%	1/4W	
R321	1-249-405-11	CARBON	100	5%	1/4W	
R322	1-249-429-11	CARBON	10K	5%	1/4W	
R323	1-249-433-11	CARBON	22K	5%	1/4W	
R324	1-249-433-11	CARBON	22K	5%	1/4W	
R325	1-249-425-11	CARBON	4.7K	5%	1/4W	
R326	1-249-409-11	CARBON	220	5%	1/4W	
R327	1-249-425-11	CARBON	4.7K	5%	1/4W	
R328	1-249-417-11	CARBON	1K	5%	1/4W	
R330	1-249-417-11	CARBON	1K	5%	1/4W	
R331	1-249-429-11	CARBON	10K	5%	1/4W	
R332	1-249-429-11	CARBON	10K	5%	1/4W	
R333	1-249-433-11	CARBON	22K	5%	1/4W	
R334	1-249-425-11	CARBON	4.7K	5%	1/4W	
R335	1-249-425-11	CARBON	4.7K	5%	1/4W	
R336	1-249-425-11	CARBON	4.7K	5%	1/4W	
R337	1-249-429-11	CARBON	10K	5%	1/4W	
R338	1-249-433-11	CARBON	22K	5%	1/4W	
R339	1-249-401-11	CARBON	47	5%	1/4W	
R340	1-247-881-00	CARBON	120K	5%	1/4W	
R341	1-247-881-00	CARBON	120K	5%	1/4W	
R342	1-247-881-00	CARBON	120K	5%	1/4W	
R343	1-247-889-00	CARBON	270K	5%	1/4W	
R344	1-247-887-00	CARBON	220K	5%	1/4W	
R345	1-247-887-00	CARBON	220K	5%	1/4W	
R346	1-249-441-11	CARBON	100K	5%	1/4W	
R347	1-249-441-11	CARBON	100K	5%	1/4W	
R348	1-249-441-11	CARBON	100K	5%	1/4W	
R349	1-249-441-11	CARBON	100K	5%	1/4W	
R350	1-249-435-11	CARBON	33K	5%	1/4W	
R351	1-249-435-11	CARBON	33K	5%	1/4W	
R352	1-249-441-11	CARBON	100K	5%	1/4W	
R353	1-249-441-11	CARBON	100K	5%	1/4W	
R354	1-249-441-11	CARBON	100K	5%	1/4W	
R355	1-249-417-11	CARBON	1K	5%	1/4W	
R356	1-249-417-11	CARBON	1K	5%	1/4W	
R357	1-249-405-11	CARBON	100	5%	1/4W	
R358	1-249-417-11	CARBON	1K	5%	1/4W	
R359	1-249-408-11	CARBON	180	5%	1/4W	
R360	1-215-447-00	METAL	12K	1%	1/6W	
R361	1-215-447-00	METAL	12K	1%	1/6W	
R364	1-249-406-11	CARBON	120	5%	1/4W	
R365	1-249-425-11	CARBON	4.7K	5%	1/4W	

When indicating parts by reference number, please include the board name.

MAIN

Ref. No.	Part No.	Description				Remarks
R368	1-249-417-11	CARBON	1K	5%	1/4W	
R369	1-249-405-11	CARBON	100	5%	1/4W	
R370	1-249-405-11	CARBON	100	5%	1/4W	
R371	1-249-417-11	CARBON	1K	5%	1/4W	
R372	1-249-405-11	CARBON	100	5%	1/4W	
R373	1-249-417-11	CARBON	1K	5%	1/4W	
R374	1-249-417-11	CARBON	1K	5%	1/4W	
R375	1-249-405-11	CARBON	100	5%	1/4W	
R378	1-249-429-11	CARBON	10K	5%	1/4W	
R379	1-249-414-11	CARBON	560	5%	1/4W	
R380	1-249-411-11	CARBON	330	5%	1/4W	
⚠R381	1-215-881-11	METAL OXIDE	15	5%	2W	F
R382	1-249-441-11	CARBON	100K	5%	1/4W	
R383	1-249-401-11	CARBON	47	5%	1/4W	
R384	1-249-437-11	CARBON	47K	5%	1/4W	
R385	1-249-437-11	CARBON	47K	5%	1/4W	
R386	1-249-413-11	CARBON	470	5%	1/4W	
R387	1-249-407-11	CARBON	150	5%	1/4W	
R388	1-249-423-11	CARBON	3.3K	5%	1/4W	
R389	1-249-423-11	CARBON	3.3K	5%	1/4W	
R390	1-249-423-11	CARBON	3.3K	5%	1/4W	
R391	1-249-423-11	CARBON	3.3K	5%	1/4W	
R392	1-249-417-11	CARBON	1K	5%	1/4W	
R393	1-249-420-11	CARBON	1.8K	5%	1/4W	
R394	1-249-429-11	CARBON	10K	5%	1/4W	
R395	1-249-425-11	CARBON	4.7K	5%	1/4W	
R396	1-249-441-11	CARBON	100K	5%	1/4W	
R406	1-249-429-11	CARBON	10K	5%	1/4W	
R407	1-249-429-11	CARBON	10K	5%	1/4W	
R408	1-249-429-11	CARBON	10K	5%	1/4W	
R409	1-249-425-11	CARBON	4.7K	5%	1/4W	
R410	1-249-425-11	CARBON	4.7K	5%	1/4W	
R411	1-249-417-11	CARBON	1K	5%	1/4W	
R412	1-249-441-11	CARBON	100K	5%	1/4W	
R413	1-249-437-11	CARBON	47K	5%	1/4W	
R414	1-249-413-11	CARBON	470	5%	1/4W	
R415	1-249-437-11	CARBON	47K	5%	1/4W	
R416	1-249-437-11	CARBON	47K	5%	1/4W	
R418	1-249-413-11	CARBON	470	5%	1/4W	
R419	1-249-413-11	CARBON	470	5%	1/4W	
R420	1-249-413-11	CARBON	470	5%	1/4W	
R421	1-249-413-11	CARBON	470	5%	1/4W	
R422	1-249-413-11	CARBON	470	5%	1/4W	
R424	1-249-411-11	CARBON	330	5%	1/4W	
R425	1-249-411-11	CARBON	330	5%	1/4W	
R429	1-249-407-11	CARBON	150	5%	1/4W	
R432	1-249-393-11	CARBON	10	5%	1/4W	
R434	1-249-836-11	CARBON	1.6K	5%	1/4W	
R435	1-249-409-11	CARBON	220	5%	1/4W	
R436	1-249-409-11	CARBON	220	5%	1/4W	
R437	1-249-409-11	CARBON	220	5%	1/4W	
R438	1-249-409-11	CARBON	220	5%	1/4W	
R439	1-249-437-11	CARBON	47K	5%	1/4W	
R440	1-249-441-11	CARBON	100K	5%	1/4W	
R441	1-249-441-11	CARBON	100K	5%	1/4W	
R442	1-249-441-11	CARBON	100K	5%	1/4W	
R443	1-249-437-11	CARBON	47K	5%	1/4W	
R444	1-249-417-11	CARBON	1K	5%	1/4W	
R445	1-249-419-11	CARBON	1.5K	5%	1/4W	
R446	1-247-883-00	CARBON	150K	5%	1/4W	
R447	1-249-425-11	CARBON	4.7K	5%	1/4W	
R448	1-249-413-11	CARBON	470	5%	1/4W	
R449	1-249-424-11	CARBON	3.9K	5%	1/4W	
R451	1-247-891-00	CARBON	330K	5%	1/4W	
R462	1-247-804-11	CARBON	75	5%	1/4W	
R490	1-249-425-11	CARBON	4.7K	5%	1/4W	
R495	1-249-429-11	CARBON	10K	5%	1/4W	
R497	1-249-429-11	CARBON	10K	5%	1/4W	
R498	1-249-417-11	CARBON	1K	5%	1/4W	
R499	1-249-429-11	CARBON	10K	5%	1/4W	
R501	1-249-417-11	CARBON	1K	5%	1/4W	
R502	1-249-429-11	CARBON	10K	5%	1/4W	
R503	1-249-429-11	CARBON	10K	5%	1/4W	
R504	1-249-429-11	CARBON	10K	5%	1/4W	
R505	1-249-428-11	CARBON	8.2K	5%	1/4W	
R506	1-249-441-11	CARBON	100K	5%	1/4W	
R507	1-249-417-11	CARBON	1K	5%	1/4W	
R508	1-249-417-11	CARBON	1K	5%	1/4W	
R509	1-249-417-11	CARBON	1K	5%	1/4W	
R510	1-247-806-11	CARBON	91	5%	1/4W	
R513	1-249-417-11	CARBON	1K	5%	1/4W	
R514	1-249-423-11	CARBON	3.3K	5%	1/4W	
R515	1-249-423-11	CARBON	3.3K	5%	1/4W	
R516	1-249-425-11	CARBON	4.7K	5%	1/4W	
R517	1-249-429-11	CARBON	10K	5%	1/4W	
R518	1-249-417-11	CARBON	1K	5%	1/4W	
R519	1-249-417-11	CARBON	1K	5%	1/4W	
R520	1-247-903-00	CARBON	1M	5%	1/4W	
R601	1-249-417-11	CARBON	1K	5%	1/4W	
R603	1-249-405-11	CARBON	100	5%	1/4W	
R604	1-249-419-11	CARBON	1.5K	5%	1/4W	
R605	1-249-389-11	CARBON	4.7	5%	1/4W	
R606	1-249-429-11	CARBON	10K	5%	1/4W	

< VARIABLE RESISTOR >

RV601	1-226-773-11	RES, ADJ, METAL 22K (FWD TORQUE)

< RELAY >

RY301	1-515-726-11	RELAY

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

When indicating parts by reference number, please include the board name.

Ref. No.	Part No.	Description				Remarks
		< COIL >				
T301	1-459-795-11	COIL (WITH CORE)				
		< VIBRATOR >				
X301	1-567-816-11	VIBRATOR, CRYSTAL (18.816MHz)				
X302	1-567-815-11	VIBRATOR, CRYSTAL (22.5792MHz)				
X303	1-578-667-11	VIBRATOR, CRYSTAL (49.152MHz)				
X304	1-567-098-00	OSCILLATOR, CRYSTAL (32.768kHz)				
***						
*	1-641-486-11	MOTOR BOARD ***********				
		< CAPACITOR >				
C01	1-162-851-11	CERAMIC	0.1MF		16V	
		< CONNECTOR >				
* CN1	1-564-498-11	PIN, CONNECTOR 5P				
* CN2	1-564-337-00	PIN, CONNECTOR 3P				
***						
*	A-2006-819-A	POWER BOARD, COMPLETE *********************				
		< CAPACITOR >				
C907	1-126-946-11	ELECT	6800uF	20%	25V	
C908	1-136-165-00	FILM	0.1uF	5%	50V	
C909	1-124-473-11	ELECT	1000uF	20%	10V	
C910	1-164-159-11	CERAMIC	0.1uF		50V	
C911	1-164-159-11	CERAMIC	0.1uF		50V	
C912	1-124-473-11	ELECT	1000uF	20%	10V	
C913	1-126-104-11	ELECT	470uF	20%	35V	
C914	1-126-104-11	ELECT	470uF	20%	35V	
C915	1-126-049-11	ELECT	22uF	20%	50V	
C916	1-126-052-11	ELECT	100uF	20%	50V	
C917	1-136-165-00	FILM	0.1uF	5%	50V	
C918	1-130-834-00	FILM	1uF	10%	63V	
C919	1-136-165-00	FILM	0.1uF	5%	50V	
C920	1-128-468-51	ELECT	4700uF	20%	25V	
C921	1-128-468-51	ELECT	4700uF	20%	25V	
C922	1-136-165-00	FILM	0.1uF	5%	50V	
C923	1-136-165-00	FILM	0.1uF	5%	50V	
C924	1-136-165-00	FILM	0.1uF	5%	50V	
C925	1-136-165-00	FILM	0.1uF	5%	50V	
C926	1-126-105-11	ELECT	1000uF	20%	35V	
C927	1-126-105-11	ELECT	1000uF	20%	35V	
		< CONNECTOR >				
* CN905	1-560-338-00	PIN, CONNECTOR 7P				

Ref. No.	Part No.	Description				Remarks
* CN906	1-560-061-00	PIN, CONNECTOR 3P				
* CN931	1-564-505-11	PLUG, CONNECTOR 2P				
* CN932	1-564-511-11	PLUG, CONNECTOR 8P				
* CN933	1-564-506-11	PLUG, CONNECTOR 3P				
		< DIODE >				
D905	8-719-312-47	DIODE	RBA-406B			
D906	8-719-107-94	DIODE	1SS202-1			
D907	8-719-200-82	DIODE	11ES2			
D908	8-719-200-82	DIODE	11ES2			
D909	8-719-934-15	DIODE	HZS24-3L			
D910	8-719-933-33	DIODE	HZS6A1L			
D911	8-719-200-77	DIODE	10E2N			
D912	8-719-200-77	DIODE	10E2N			
D913	8-719-200-77	DIODE	10E2N			
D914	8-719-200-77	DIODE	10E2N			
D915	8-719-107-94	DIODE	1SS202-1			
D916	8-719-107-94	DIODE	1SS202-1			
		< FUSE >				
⚠F901	1-532-744-11	FUSE, GLASS TUBE (2.5A) (US, Canadian)				
⚠F901	1-532-286-11	FUSE, TIME-LAG (T2.5A) (AEP, E)				
		< IC >				
IC901	8-759-148-79	IC	uPC2406HF			
IC902	8-759-231-53	IC	TA7805S			
IC903	8-759-231-58	IC	TA7812S			
IC904	8-759-245-86	IC	TA79012S			
		< TRANSISTOR >				
Q901	8-729-140-97	TRANSISTOR	2SB734-34			
		< RESISTOR >				
R901	1-249-425-11	CARBON	4.7K	5%	1/4W	
⚠R902	1-212-849-00	FUSIBLE	4.7	5%	1/4W	F
R903	1-249-421-11	CARBON	2.2K	5%	1/4W	
⚠R904	1-212-865-00	FUSIBLE	22	5%	1/4W	F
R905	1-249-433-11	CARBON	22K	5%	1/4W	
***						
*	1-645-235-11	RELAY BOARD ***********				
***						
*	1-645-234-11	PRIMARY BOARD *************				
*	3-346-266-12	PLATE, GROUND				

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Ne les remplacer que par une pièce portant le numéro spécifié.

When indicating parts by reference number, please include the board name.

PRIMARY | REC VOL | REEL MOTOR | RF AMP

Ref. No.	Part No.	Description			Remarks
		< CAPACITOR >			
⚠C901	1-161-744-00	CERAMIC	0.01uF		400V
⚠C902	1-161-742-00	CERAMIC	0.0022uF	20%	400V
⚠C903	1-161-742-00	CERAMIC	0.0022uF	20%	400V
⚠C904	1-161-742-00	CERAMIC	0.0022uF	20%	400V
⚠C905	1-161-742-00	CERAMIC	0.0022uF	20%	400V(AEP, E)
⚠C906	1-161-744-00	CERAMIC	0.01uF		400V
		< CONNECTOR >			
* CN901	1-564-321-00	PIN, CONNECTOR 2P			
CN902	1-564-321-00	PIN, CONNECTOR 2P			
		< COIL >			
⚠L901	1-421-915-11	COIL, LINE FILTER			
		< SWITCH >			
⚠S921	1-571-722-11	SWITCH, VOLTAGE SELECTION			(VOLTAGE SELECTOR) (E)

****

*	1-645-239-11	REC VOL BOARD *************			
		< CONNECTOR >			
* CN102	1-564-519-11	PLUG, CONNECTOR 4P			
		< RESISTOR >			
R101	1-259-462-11	CARBON	27K	5%	1/6W
R201	1-259-462-11	CARBON	27K	5%	1/6W
		< VARIABLE RESISTOR >			
RV101	1-241-937-11	RES, VAR, CARBON 20K/20K			(REC LEVEL)

****

*	1-639-304-11	REEL MOTOR BOARD ****************			
		< CAPACITOR >			
C07	1-163-077-00	CERAMIC CHIP	0.1uF	10%	25V

****

Ref. No.	Part No.	Description			Remarks
		RF AMP BOARD, COMPLETE **********************			
		< CAPACITOR >			
C1	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C2	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C3	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C4	1-162-638-11	CERAMIC CHIP	1uF		16V
C5	1-164-299-11	CERAMIC CHIP	0.22uF	10%	25V
C6	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C7	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C8	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C9	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C10	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C11	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C12	1-164-299-11	CERAMIC CHIP	0.22uF	10%	25V
C13	1-162-638-11	CERAMIC CHIP	1uF		16V
C14	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C15	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C16	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C17	1-163-001-11	CERAMIC CHIP	220PF	10%	50V
C18	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C19	1-163-001-11	CERAMIC CHIP	220PF	10%	50V
C20	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V
C21	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C22	1-126-603-11	ELECT CHIP	4.7uF	20%	35V
C23	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C24	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C25	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C26	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C27	1-162-638-11	CERAMIC CHIP	1uF		16V
C28	1-164-505-11	CERAMIC CHIP	2.2uF		16V
		< CONNECTOR >			
* CN51	1-566-207-11	PIN, CONNECTOR (PC BOARD) 14P			
* CN52	1-564-720-11	PIN, CONNECTOR (SMALL TYPE) 4P			
		< IC >			
IC1	8-752-039-01	IC CXA1364R			
		< COIL >			
L1	1-408-781-00	INDUCTOR CHIP	22uH		
L2	1-408-789-21	INDUCTOR CHIP	100uH		
L3	1-408-781-00	INDUCTOR CHIP	22uH		
		< RESISTOR >			
R1	1-216-082-00	METAL GLAZE	24K	5%	1/10W
R2	1-216-082-00	METAL GLAZE	24K	5%	1/10W
R3	1-216-066-00	METAL CHIP	5.1K	5%	1/10W
R4	1-216-066-00	METAL CHIP	5.1K	5%	1/10W
R5	1-216-077-00	METAL CHIP	15K	5%	1/10W
R6	1-216-077-00	METAL CHIP	15K	5%	1/10W
R7	1-216-077-00	METAL CHIP	15K	5%	1/10W
R8	1-216-079-00	METAL CHIP	18K	5%	1/10W
R9	1-216-075-00	METAL CHIP	12K	5%	1/10W
R10	1-216-079-00	METAL CHIP	18K	5%	1/10W
R11	1-216-077-00	METAL CHIP	15K	5%	1/10W

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Replace only with part number specified.

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Ne les remplacer que par une pièce portant le numéro spécifié.

When indicating parts by reference number, please include the board name.

RF AMP | RGN SW | SW | TIMER SW | TOP END SENSOR

Ref. No.	Part No.	Description	Remarks
R12	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R13	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R14	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R15	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R16	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R17	1-216-080-00	METAL CHIP 20K 5% 1/10W	
R18	1-216-073-00	METAL CHIP 10K 5% 1/10W	
		< VARIABLE RESISTOR >	
RV1	1-238-181-11	RES, ADJ, CERMET 4.7K	
RV2	1-238-181-11	RES, ADJ, CERMET 4.7K	
**			
*	1-639-301-11	RGN SW BOARD ************	
		< SWITCH >	
S01	1-571-878-11	SWITCH, PUSH (2 KEY)	(CASSETTE IN/REC PROOF)
**			
*	1-641-487-11	SW BOARD ********	
		< SWITCH >	
S1	1-571-958-11	SWITCH, PUSH (1 KEY)(CASSETTE TABLE IN)	
S2	1-571-958-11	SWITCH, PUSH (1 KEY)(CASSETTE TABLE OUT)	
**			
*	1-645-243-11	TIMER SW BOARD **************	
		< RESISTOR >	
R704	1-249-427-11	CARBON 6.8K 5% 1/4W	
R705	1-249-432-11	CARBON 18K 5% 1/4W	
		< SWITCH >	
S701	1-571-520-11	SWITCH, SLIDE (TIMER)	
S702	1-554-937-11	SWITCH, KEY BOARD (⏏ OPEN/CLOSE)	
**			
*	1-639-305-11	TOP END SENSOR BOARD ********************	
*	3-368-456-01	HOLDER (END SENSOR LIGHT)	
*	3-368-457-01	HOLDER (END SENSOR) (RECIEVE)	
		< DIODE >	
D01	8-719-988-42	DIODE GL453S	
		< PHOTO INTERUPTER >	
PH03	8-729-907-25	TRANSISTOR PT4850F	

Ref. No.	Part No.	Description	Remarks
PH04	8-729-907-25	TRANSISTOR PT4850F	
**			
		MISCELLANEOUS *************	
⚠10	1-559-297-31	CODE, POWER (E)	
⚠10	1-559-479-11	CORD, POWER (US, Canadian)	
⚠10	1-575-912-11	CORD, POWER (AEP)	
13	1-590-321-71	LEAD (WITH CONNECTOR)(CONTROL-S IN)	
107	1-533-183-11	HOLDER, FUSE	
114	1-590-915-11	WIRE, FLAT TYPE (30 CORE)	
118	1-590-916-11	WIRE, FLAT TYPE (10 CORE)	
119	1-590-914-11	WIRE, FLAT TYPE (6 CORE)	
325	8-848-567-11	DRUM ASSY DOU-03A	
M901	A-2003-910-A	MOTOR ASSY, CASSETTE	(CASSETTE COMPARTMENT)
M902	8-835-361-01	MOTOR, DC U-17B (CAPSTAN)	
M903	X-3363-109-1	MOTOR (CAM) ASSY	
M905	X-3363-110-1	MOTOR (REEL) ASSY	
PM902	1-454-536-11	SOLENOID, PLUNGER (BT CONTROL)	
PM903	1-454-535-11	SOLENOID, PLUNGER (BRAKE)	
⚠S901	1-554-920-21	SWITCH, PUSH (AC POWER)(1 KEY)(POWER)	
⚠T901	1-450-556-21	TRANSFORMER, POWER (US, Canadian)	
⚠T901	1-450-557-21	TRANSFORMER, POWER (AEP)	
⚠T901	1-450-558-21	TRANSFORMER, POWER (E)	
**			
		ACCESSORIES & PACKING MATERIALS ******************************	
	1-465-737-11	REMOTE COMMANDER	(US, Canadian, E/AEP:BLACK)
	1-465-777-11	REMOTE COMMANDER (AEP:GOLD)	
	1-558-271-11	CORD, CONNECTION	
	3-704-366-01	SCREW (CASE)(M3X8)	(US, Canadian, E/AEP:BLACK)
	3-704-366-11	SCREW (CASE)(M3X8)(AEP:GOLD)	
	3-707-584-01	COVER, BATTERY	
	3-755-612-11	MANUAL, INSTRUCTION (ENGLISH, FRENCH, SPANISH, PORTUGUESE)(AEP, E)	
	3-755-612-21	MANUAL, INSTRUCTION (ENGLISH)	(US, Canadian)
	3-755-612-31	MANUAL, INSTRUCTION (FRENCH)(Canadian)	
	3-755-612-41	MANUAL, INSTRUCTION (GERMAN, DUTCH, SWEDISH, ITALIAN)(AEP)	
	3-382-950-01	CUSHION	
	3-383-048-01	INDIVIDUAL CARTON	
	9-910-999-33	INSTRUCTION (US)	
**			

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

When indicating parts by reference number, please include the board name.

Ref. No.	Part No.	Description	Remarks
		HARDWARE LIST	
#1	7-682-548-09	SCREW +BVTT 3X8 (S)	
#2	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
#3	7-685-134-19	SCREW (+ PTPWH) (2.6X8)	
#4	7-685-534-19	SCREW +BTP 2.6X8 TYPE2 N-S	
#5	7-685-645-19	SCREW +BVTP 3X8 TYPE2 N-S	
#6	7-685-133-19	SCREW +BTP 2.6X6 TYPE2 N-S	
#7	7-682-147-15	SCREW, TR	
#8	7-621-775-20	SCREW +B 2.6X5	
#9	7-682-560-04	SCREW +BVTT 4X6 (S)	
#10	7-682-547-04	SCREW +BVTT 3X6 (S)	
#11	7-621-772-00	SCREW +B 2X3	
#12	7-685-102-19	SCREW +P 2X4 TYPE2 NON-SLIT	
#13	7-621-773-86	SCREW +B 2.6X4	
#14	7-627-556-17	SCREW, PRECISION +P 2.6X3 TYPE1	
#15	7-621-772-08	SCREW +B 2X3	
#16	7-621-772-18	SCREW +B 2X4	
#17	7-627-552-47	SCREW, PRECISION +P 1.7X4	
#18	7-621-255-20	SCREW +BVTT 2X4 (S)	
#19	7-627-854-07	PRECISION SCREW +P 2X2.5 TYPE3	
#20	7-627-852-27	+P 1.7X3	
#21	7-621-255-15	SCREW +P 2X3	
#22	7-627-552-27	SCREW, PRECISION +P 1.7X2	

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